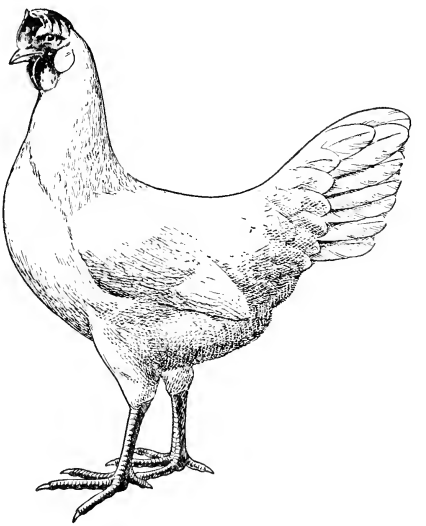
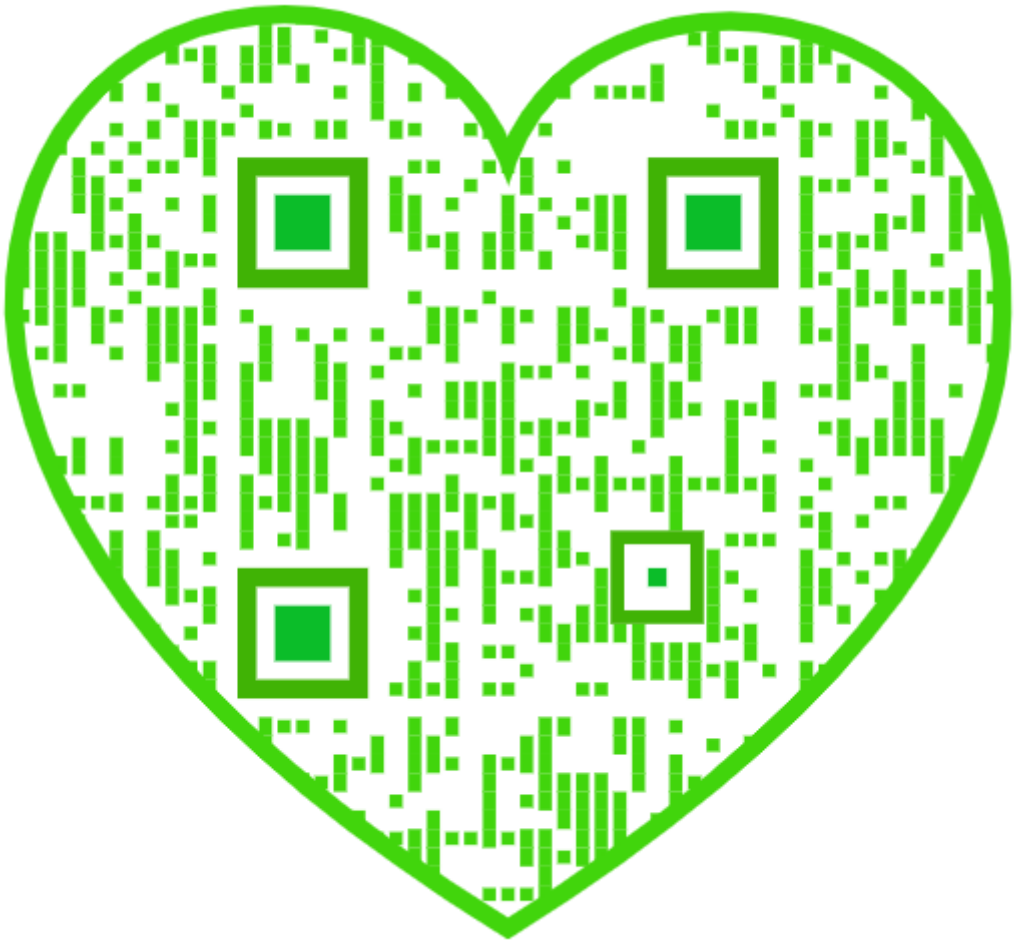
THE LEGHORNS



BROWN-WHITE-BUFF-BLACK DUCKWING

By America's Leading Authorities



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STANDARD-BRED

LEGHORNS

Brown, White, Buff, Black and Silver Duckwing

Their Origin and History and Practical Qualities; The Standard Requirements; How to Mate and Breed for Best Results; with a Chapter on Non-Standard Varieties; How to Judge Them; Commercial Leghorn Egg Farms

J. H. DREVENSTEDT, EDITOR

CONTRIBUTED TO BY THE BEST KNOWN AND MOST EXPERT BREEDERS AND JUDGES IN AMERICA

FULLY ILLUSTRATED

Text and Illustrations are Based Upon the Requirements of the 1910 Edition of the American Standard of Perfection

PRICE, ONE DOLLAR

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INTRODUCTORY

HIS new breed book, devoted to the Leghorn race of domesticated poultry, is published at a time when thousands of poultry raisers are taking up the different varieties of Leghorns for the purpose of supplying the ever-increasing demand for white eggs—a demand not local, but extending from the Atlantic to the Pacific Coast and from the Dominion of Canada to the Gulf of Mexico.

To the splendid achievement of American breeders in giving to the poultry industry the Plymouth Rocks, Wyandottes and Rhode Island Reds, must be added the Leghorns. All varieties of the latter, excepting the Buffs and Duckwings, originated in the United States, and the high standard of perfection that the Browns, Whites, Blacks—and we might add the Buffs—have reached today, is due to the intelligence and perseverance of American Leghorn breeders.

From the little red Italiens of the middle of the last century, which, like Topsy, "jest growed up," and the appearance of the allied white variety at the same time, has sprung the modern race of Leghorns, comprising eight Standard and four non-Standard varieties.

In preparing this new and enlarged edition of "The Leghorns," the instructions to the editor were to set the pegs far apart and get up a book worthy of the great Leghorn family—one that would be a text book of authentic information on the history, mating, breeding, exhibiting and marketing of Leghorns, regardless of the time, labor and expense involved in such an undertaking.

This agreeable, albeit difficult, task has been carried out to the limit of the energy, ability, and knowledge possessed by the editor. As an old breeder of Leghorns of over twenty years ago, as well as a judge of Leghorns at the earlier Madison Square Garden Shows, and at other great exhibitions years afterward, our opportunities for handling and examining all varieties of Leghorns were many, while the experience gained enabled us to study the evolution of the Leghorn fowl in America, with eyes wide open, sifting the real from the imaginary facts with greater satisfaction, and, we trust, with more accuracy, than if we had had to rely on the written statements of writers, past and present, alone. The conclusions arrived at are based upon substantial facts obtained from a careful research of the records, as well as personal observation in the show room and breeding yard, and impartially presented for the careful consideration of our readers.

We are greatly indebted to America's foremost Leghorn breeders for the many valuable articles contributed to the different chapters of "The Leghorns," such articles being of permanent benefit to all admirers of the popular Leghorn fowl.

The art work by Franklane L. Sewell is one of the great features of the book. Mr. Sewell stands pre-eminent among poultry artists of the world, and his Leghorn studies are among the finest illustrations his artistic skill has produced. They convey most beautifully the evolution of the Leghorn type from its embryotic stage to the present Standard ideal. A. O. Schilling, I. W. Burgess, L. P. Graham and H. G. Froby also contribute excellent and important illustrations of modern exhibition specimens.

The chapter on Commercial Leghorn Farms is invaluable to practical poultry raisers. It gives the methods of successful Leghorn poultry farmers, illustrated with photographic views of buildings and appliances, and will convince many, if not all, readers, that there are sound reasons for proclaiming the Leghorn to be "The Business Fowl of the Twentieth Century."

J. H. DREVENSTEDT.

THE LEGHORNS

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CHAPTER I

Origin of the Leghorn Fowl

History of the Development of the Leghorn Breed of Domestic Fowl, a Breed that now Consists of Eight Standard and Nine Non-Standard Varieties—White, Brown and Black Leghorns First Produced and Exhibited in the United States in the Middle of the Nineteenth Century—White Leghorns Imported from America to England in 1869, Buff Leghorns Introduced into England from Denmark in 1888

J. H. Drevenstedt

LEGHORNS have been known and bred for a very long period of years in Europe as "Italiens," prior to their arrival in America, and are still known by this name on the Continent of Europe. In England they have been known as Leghorns from the time of the first exportation from America to Great Britain in 1868, the name given to the breed by American fanciers. So, at least, the origin of the name can be claimed by America. But by American breeders can be made the greater and more substantial claim of being the real originators of the immensely popular and distinctively typical and beautiful White and Brown Leghorns of the present day. They received the crude material from sunny Italy and started the refining process at once; and in the early fifties of the last century, fairly good types of both brown and white varieties were seen in different localities of New England, the "cradle of the American fancy."

Some writers of the past claim that the White Leghorn was the original Leghorn breed from which all others sprang; other writers are equally positive that the Brown Leghorn was "on deck" at the same time, and can lay equal claim to being the progenitor of the other varieties. Claims in those days were not always clinched by facts, and we must, in reading over the conflicting testimony of breeders of White and Brown Leghorns, take some of their statements *cum grano salis*. If the old timers failed to agree on such matters, it is but reasonable to expect that some of our present day fanciers will be of the same mind. To the practical-minded breeder it makes precious little difference which variety made its debut on the American poultry stage first. One is as good as the other, and both are splendid examples of the American breeder's art in producing two such beautiful and useful varieties of fowl.

The origin and early history of any race, man or animal, always proves interesting, even if the alleged facts bearing on such leave room for doubt in the mind of the investigator and chronicler at times. In presenting what purport to be facts relating to the early history of the Leghorn fowl and the later introduction of its subvarieties, we have sifted, as much as was practical for the purpose of the completeness of this chapter, what we believed to be the substantial, from the imaginary data, at our disposal.

In the "Poultry World," February, 1873, I. K. Felch contributed the following data bearing on the origin and description of the Leghorn fowl:

I have been, ever since their introduction into the country, well aware of the merits of the Leghorn fowl. The first importation of these fowls was made into Mystic River, Conn., in the year 1855; and they were what we term the Brown Leghorn. The nice pure brown of their breasts was very peculiar, and also very beautiful in color—in fact, so much so that I sold many of them to the taxidermists for their feathers, of which many a crest has been made and has appeared on the hat of many a gentlewoman as she passed along the street, having purchased same as imported feathers.

The hens in color generally present reddish brown, running in some cases into pure brown color; and in weight they seldom exceed four pounds, while an average would be three and one-half pounds. While young, and before commencing their first litter of eggs, they resemble very much the Derby Game hens, their comb never becoming fully developed until they commence to lay, when it comes out a pure red and so clear that the reflection of light can be seen through it.

Hens whose combs stand upright are, to my mind, preferable, as it is these which generally produce the most perfect cock; a lopped-comb cock is very objectionable, and if your breeding hens are those whose combs fall over to one side of their heads, as I have seen them, so as to cover the eye, one need not expect to breed more than one-half the cocks with upright combs. In the first importation the combs were so large as to be a great deformity.

The cocks should weigh from four and one-half to five pounds, at twelve months of age, and never exceed it; and in color they should be identical with the Black-Red Game. I regret that the "Standard" so poorly describes, or, as I may say, fails so entirely to describe it.

The beak and legs should be yellow, and the latter quite short; breast, black (splashes of brown objection-

1. FIRST WHITE LEGHORNS IMPORTED FROM AMERICA TO ENGLAND IN 1869.

able, but not a disqualification); fluff and thighs more or less brown-tinged; wings, reddish-brown; tails large, full sickles (well curved in "Standard"—I say tolerably well curved), the whole tail carried upright. It is not an uncommon thing to see a good cock, when strutting about, have his comb and tail meet above his back. The back should be wide and short, and of deep red or mahogany color; hackle and saddle same as in Black-Red Game; head and face small, as in "Standard;" and I am afraid judges are attaching too much importance to this, and like the Black Spanish, they will sacrifice the whole merit to this one requirement. I fear that in time we shall see, as in the Spanish, degenerate sons of noble sires, feebly contending for prizes, and striving to sustain a race whose glory is found in the past. In or about 1838 we had the White Leghorn with white legs, which was known as the Lord importation. Later, in 1863, we had what was known as the Stetson importation, which was white in plumage, with yellow beak and legs. In weight, like the brown variety, the hens average 3½ pounds, the cocks from 4½ to 5 pounds, the latter, however, being seldom reached. These fowls as egg producers, in their original perfection, were truly marvelous. I have known of a hen of this last importation that laid 159 days in succession, and have the assertion of a friend that one laid 275 eggs in one year; but the largest number which I know of personally and which I deem very extraordinary, was 250. An average, in my experience, has been from 175 to 200 eggs. With good care 200 eggs need not be despaired of.

The combs of all three of these varieties were the same, and not at all like the Black Spanish. In many cuts published of late, one sees them with combs of a Spanish shape. This is wrong in itself, and leads many an amateur astray. A Leghorn has rarely but five points to his comb, —two double-pointed serratures and three singie ones, and cut very deep down into it. The shape, once seen, cannot be mistaken, and therefore needs no fuller description by me. In the early importations these combs grew to an enormous size. I have seen young cocks with such combs and wattles that they were unable to hold up their heads. I killed a cock so troubled, his whole live weight being 3½ pounds, and his head, comb and wattles weighing 19 ounces—as nearly one-third his weight as could well be. They have smaller combs now, which I cannot but hail for the better.

The Brown Leghorn Standard referred to by Mr. Felch above, gives the following description of the breed:

The Cock

Comb—bright red, large, erect, single, straight, and free from twists or falling over to either side, deeply serrated, extending well back over the head and free from side sprigs or excrescences. Legs—bright yellow. Breast —Black, splashed with brown. Wings—Reddish brown. Tail—large, full, sickle well curved. Face—bright red, free from wrinkles or folds. Ear-lobes—Pure opaque, white, rather pendant, thin, and close fitting to the head, smooth and free from wrinkles.

The Hen

Head—brown. Neck—light yellowish brown, striped with black. Back and shoulder coverts—brown. Wing bow, shoulder primaries and secondaries—brown. Tail—dark brown, approaching black. Breast, deep salmon, shading off to ashy brown toward the thighs. Thighs—ashy brown. Legs—to match those of cock.

Points in Brown Leghorns

Size	15
Comb	20
Face and Ear-lobe	20
Color of Plumage	20
Symmetry	15
Condition	10

Disqualifications in Brown Leghorns

Legs, other than yellow; comb lopping over in cock; prick-comb on hen; red deaf-ear; white feathers in any part of the plumage.

This Standard was about as crude and incomplete as the breed itself at that time. The first official American Standard of Excellence issued by the American Poultry Association in 1874, however, gives a far better and more complete description of Brown Leghorns; also giving the first scale of points based upon the 100-point system, adopted by the Association at its annual meeting held at Buffalo, New York, January 15th to 18th, 1874.

Not long after Mr. Felch wrote his introductory Leghorn article, other writers began to air their knowledge on the subject and dispute the Felch claims. In the November "Poultry World," 1873, a correspondent who signed himself "B. Leghorn" remarked:

I cannot agree with Mr. Felch in regard to the Leghorns. In the first place, I cannot agree with him that so long ago as 1855 they were known or recognized as a distinct breed. I am well aware that fowls of all shades have been imported into this country under the name of Leghorns, which had no title whatever to the designation, except the bare fact that they came from the vicinity of the city bearing that name.

They do not appear to have been recognized by any of the poultry authorities of Europe as a distinct breed, until long after they had been bred and perfected in this country; since which time they have only been recognized as an American breed. It would appear to be a very remarkable oversight on the part of those who have brought poultry fancying to its present status in England, to have passed by so valuable a variety, or to be ignorant of its existence. Some years ago, Mr. Brent, a celebrated poultry breeder and judge, now deceased, wrote as follows in relation to the Spanish fowl: "I am at a loss to understand why only one variety of this breed is patronized, seeing there are others. I think it but justice that this breed should have as many classes as any other breed. I would give them four classes,—Black Spanish, White Spanish, Blue Spanish, and any other variety of Spanish." If this means anything, it most assuredly recognizes a large class of fowls of various colors which would be classed under the name of Spanish. There is no doubt that the White Leghorns now so celebrated in this country, were originally identical with the White Spanish which have been known in England.

Mr. Tegetmeier also says: "The geographical names by which the majority of the different breeds of our domestic poultry are at present known to us are unquestionably erroneous. But with Spanish the case appears somewhat different. All along the Mediterranean, from Gibraltar to Syria, the countries that border on that vast inland sea abound with fowls that bear so close a resemblance to the Spanish race as may warrant our assigning them to one common stock. Purity of breed, however, is but little esteemed; nevertheless, with those who have examined with any care the natural history of this section of gallinaceous birds, little hesitation would be felt as to the extreme probability of a common descent."

It seems to me that statements like these from gentlemen who are recognized authorities in poultry matters, ought to set at rest any claim to the Leghorns as a distinct European breed. The birds mentioned by Mr. Felch as having been imported in 1855 and 1858, were undoubtedly selected from these mongrels spoken of by Mr. Tegetmeier, and from them has arisen the Brown Leghorn of our day, so widely known as an American breed.

So much for the history of this variety. Now let us follow Mr. Felch in his description of this breed. In the opening of his paper he says: "The nice pure brown of their breasts (speaking of the hen) being very peculiar;" and again; "The hens in color generally present reddish brown, running in some cases to pure brown." This may possibly answer for the early importations, but the tearer the color of both cock and hen approaches the color of Black-Red Games, the more highly are they prized by our best breeders. In regard to the comb of the hen, he says: "Hens, whose combs stand upright are, to my mind preferable, as it is these which generally produce the most perfect cocks." Believing, as I have always believed, that the Leghorns, both Brown and White, are Spanish in their origin, I entertain the opinion that the same rule which would apply in judging Spanish, would apply also to them (the Leghorns).

Mr. Hewett, the best known poultry judge, says: "In Spanish hens the combs should lap in front, and fall over sideways." The erect comb, called a prick-comb, which

our friend prefers, is laid down in the English and American Standards as a disqualification, and will not in all probability find much favor with the Leghorn fanciers. In another part of his paper he says in regard to the tail of the cock: "It is not an uncommon thing to see a good cock, when strutting about, have his comb and tail meet above his back." Here again he is at fault, for if he will turn his attention to the general description of shape of the Spanish class in the English or American Standard, he will discover that the tail of the cock must not be carried over the back, or be "squirrel-tailed." In relation to the legs, I think it a mistake to put too much stress on shortness; I should prefer to have them long enough to prevent a squatty appearance. I shall most cheerfully agree with him in what he says in regard to size, not only in relation to the Leghorn, but also in relation to the Brahma, in a former paper on that breed, for I honestly believe that some of our most valuable breeds have been utterly ruined in the strife for weight, and I am rejoiced to see that a reaction is about to take place.

I regret to feel obliged to be thus critical in my remarks, and I wish it to be understood that I do so with the kindest feeling toward my friend, Mr. Felch, for whom I entertain the greatest respect, and to whom, as well as to his brother, the poultry world is so largely indebted for their labors in perfecting one of our most valuable breeds.

The belief expressed by the above writer that both White and Brown Leghorns are of Spanish ancestry was shared by many others at that period, but others were firm in their belief that Brown Leghorns were distinct from White Leghorns in their ancestry, the supposition being that they were made by crossing the Black Breasted Red Game with the so-called "Brown Italiens" that came to our shores from Italy. The more slender limbed and longer bodied White Leghorns at that early period were often white in shanks and in carriage and head points resembled the Spanish fowl. The fact that White Leghorns lay larger white eggs than the Browns, and the tendency in the earlier strains to show considerable white in the face of the males, add much weight to the statement that they are lineal descendants of the ancient Spanish race of fowl. The smaller and occasionally tinted eggs laid by Brown Leghorns indicate the same cross, although we believe Spanish blood was also used in the early construction period of this breed, especially for the purpose of obtaining the white ear-lobes. Up to 1865 Leghorns were shown as Spanish fowls, and it was through the efforts of I. K. Felch that they were finally properly classified, as will be seen by reading his statement published in the "Poultry World," November 1873:

It will be a hard fact for some, but if the truth must be spoken, Leghorns have not been allowed to be exhibited as such until since 1865.

At the first exhibition of the Worcester Poultry Club (which all know to be the pioneer of all poultry societies in the United States), Mr. Houghton, Mr. Childs, and myself, were forced to enter our Leghorns as Spanish fowls. We did so under protest. On the second day, Mr. Flint, then secretary of the Massachusetts Board of Agriculture, was present, and we carried our case before him. And these were the arguments we used to show why we should not be compelled to exhibit them as Spanish. We claimed:

1st. That our birds did not have as long legs in proportion to their bodies as the Spanish did, and that the legs were yellow in color.

2nd. That they were different in shape, their combs being coarsely serrated.

3rd. That their faces were red, and also the earlobes, and not white like the Spanish.

Mr. Flint was disposed to favor us, and, at the next exhibition, the Club received them as Leghorn fowls. Mr. Flint was then managing the "New England Farmer," and during that year I, with others, wrote articles upon the subject, which were published in that paper during the winter, I think, of 1865. In writing upon poultry, I say: "Tell the truth and shame the devil."

Mr. Felch, a few months after, made the following reply to "B. Leghorn's" criticisms of his first communication on the origin of the breed, in the "Poultry World":

I cannot see anything which should make me change my base; but I can see, as he did, how incomplete my article was, which compels me to answer him. And in answering the first twenty-one lines of his article, I will say that the date 1855, in my article, was a misprint, and that it was in 1853 that the first Brown Leghorns came into the country; and that the Brown Leghorns of today, in color of plumage and purity of blood, and as breeders of type and feather, are not one whit ahead of them. The only difference is, that the Leghorns of today are larger. The fact that since they have come into public notice, others have imported specimens that have, in each instance, bred true to form and feather, should be proof-positive to every reader that they have some pretensions as a breed at home; and it is a fact (to speak from my own experience, of which I do not guess). that these fowls have always, since 1858, been bred and known as Leghorns by the breeders. Childs and Houghton, of Worcester, and myself, well know that the reason they were not generally known to the public was because there were no poultry exhibitions in the country, after their advent, until 1864, and at the show in Worcester that year we were compelled to exhibit them as Spanish, which we did under protest. On the second day of the fair, Mr. Flint, then secretary of the Massachusetts Board of Agriculture, was present, and we appealed to him, and the characteristics of the Leghorns, in comparison to the Spanish, were discussed; and it was there they were first acknowledged publicly as Leghorns, all conceding that the two breeds were different in form and plumage and general characteristics.

In answer to the next two-thirds of a column, I ask, is it any the less strange that English people should fail to know the existence of the Leghorn breed? America failed to appreciate the Silver-penciled Hamburgs until they had been long bred in England, and came across the Atlantic as "Bolton Grays," as was the fact in the case of the first importations. His argument seems to be that because England failed to recognize the Leghorns, therefore no Leghorns could exist,—which seems to imply an inveterate prejudice in favor of England, amounting to a conviction in his mind, that "no good can come out of America." I, for one, am willing to excuse Mr. Tegetmeier from writing of the Leghorn, when, at the time he wrote, the breed had not come to notice, either in England or America.

In reference to Mr. Tegetmeier's "mongrels," I have fully answered above. I believe that they were a breed when they came to our shores. In answer to his remarks about hens with upright combs, I will say that, perhaps, in my article to which he refers, I was not particular enough in my meaning. I do not think the poultry fanciers of New England would believe me foolish enough to try to win a prize on hens with upright combs. I assert that a strain of White Leghorns which will produce ten per cent. of the pullets with upright combs, will produce cocks, ninety per cent. of which shall possess combs which stand straight on their heads, and are consequently marketable. I also assert that a strain which produces hens, all of which have thin combs lying flat over the side of their heads, as spoken of in the October number of the "World," by me, will produce at least forty per cent. of the cocks whose combs will lop before they are even twelve months old. In the one case, gentlemen, you have forty per cent. of disqualified birds; in the other, twenty per cent. Now, which strain will you prefer? I still say, the hen whose comb is inclined to be upright is sure to be the best breeder; and the experience of ten years breeding them, has made me believe it. A cock with a lopped comb is as much disqualified as a hen with an erect comb, and, in value, is worse off; for no good breeder would use the cock, while he would the hen.

As to the "squirrel-tail" spoken of by him, he should have understood that I was writing about the Brown Leghorns as I first saw them. They were, in carriage, much like Bantams.

I agree with "B. Leghorn" as to the color most desired, and heartily accept a little more length of leg, which does much to destroy the Bantam appearance of which I have spoken. I should be glad to meet and know

the writer, and can assure him a cordial welcome if he will call on me.

It was left for Frank J. Kinney, however, to give the Brown Leghorn a boost that even some of the modern poultry boomers would view with envy as well as admiration. Mr. Kinney's remarks appeared in the "Poultry World," December, 1873. We reprint them without further comment, to-wit:

A great deal is being said about this comparatively new breed. I claim to have owned the first that were ever landed in America, having bought, on ship in Boston harbor, in June, 1853, two hens and one cock, about one year old, the trio weighing 13¼ pounds. They were very handsome and very different from any poultry I had ever seen, and I liked them, but objected to the small size of their bodies and the large size of their combs and wattles, and I commenced immediately to increase the one and diminish the other, by selecting the largest hens and the broadest, lowest cocks, with the smallest combs and finest wattles, to breed from. And by following this course for a long series of years, I have succeeded in breeding hens that weigh from 4½ to 6¼ pounds, and cocks that weigh from 5½ to 7¼ pounds. I have kept strict account with my fowls from the beginning, and can, by comparing figures, see no difference in the time of their maturing and commencing to lay. Some commence when three and a half months old, and none commence older than five months. I could give figures in cases where I have "timed"—if you please—twenty-five pullets nearly every year for the last seven years, and a less number of them for the last twenty years, were it necessary.

2. KINNEY'S "BROWN PRINCE," 1873.

The best I have ever done, was the past year. I had a large number hatched out the 9th of August, 1872, and selected twenty-five pullets, to whom I gave an extra run, and moderate feed for five months, when they commenced laying the 9th of January, 1873. These twenty-five hens laid, up to the 9th of August, 1873, 3,750 eggs, or 150 each; their average weight is 5¼ pounds, and they will lay, before the 9th of August, 1874, 240 eggs more each, supposing they are properly fed and cared for, and they will lay as many every year for four or five years at least. These hens are constantly and closely confined, except a few weeks in moulting time. We carry the out-of-doors to them—all they cannot get through glass and slats—the rest of the year. We had yards of twenty three-year-old hens last year that averaged 240 eggs to the hen, about 100 more than the same strain laid six years ago, when they were a pound lighter to the hen and had not got used to being forced.

At another time I will give my experience and views on the subject of forcing poultry.

I have traveled a large extent of country in my day, and have seen a great many hens that deserve to be reported in the papers. I can call to mind instances in many states, where honest farmers have pointed out hens to me, saying: "That is a wonderful hen; she is as old as my second gal, and has allers laid and never sot; is more than ten years old;" or, "There is a hen as old as Jane, and she is twenty years old," etc. One man in Canterbury, N. H., killed a hen on the twenty-first birthday of an adopted son, and the hen was "older than the boy, and had allers laid up few last year, and now she had got so fat, was just good for nothing at all." These hens were barn-yard fowls, and of all colors, but uniformly low, square, substantially-built fowls.

I have never seen a very gamy-looking hen, or an Asiatic, that was a good laying hen very long—not many years. We had one hen, old "Red Ribbon," that laid over 2,200 eggs, and died at the age of nine years and three months from breaking an egg internally. She was as healthy-looking a hen as any in my yards at the time, and, as near as I could judge, might have laid for years longer but for the accident. "Signora," now in my yards, is six years old and has laid over 1,300 eggs. I have one hundred and more chicks in my yards, hatched from eggs laid by pullets which were raised this year; have chickens (November 13th) three months old, hatched from eggs laid by pullets that were hatched from eggs laid by "Signora" after the 5th of March, 1873. The old hen, when in condition, weighs 6½ pounds; said pullets commenced laying before they were 3½ months old, and weigh, as pullets, more than 4¾ pounds.

Mr. I. K. Felch may have his Leghorns "at an average weight of 3½ pounds as fowls and resembling, while young, and before commencing to lay, the Derby Game, with cocks never to exceed 5 pounds each, and identical in color with the Black-Red Game," if he pleases. I prefer pullets that resemble good Brown Leghorns—Standard fowls—and weigh 1½ to 2 pounds more than his, and cocks that resemble good Standard Brown Leghorn cocks and weigh 6 to 7 pounds. It seems to me to be not at all in order to compare Brown Leghorns with Games. One might as well compare Black Hamburgs with Black Cochins.

I. K. Felch, in his most vigorous and characteristic style, replied to Mr. Kinney's criticisms and incidentally riddled the latter's extravagant claims of the wonderful egg records made by Brown Leghorns, in the following number of the "Poultry World," as follows:

I have read Mr. J. F. Kinney's articles on Brown Leghorns in the June and September issues of the "Bulletin" and the December issue of the "Poultry World," and have several times been asked by correspondents and friends to answer him. Not wishing to go into any controversy, I desisted. But in the last-mentioned article he chooses to refer to me in a sarcastic way, which would, to one not used to the breed, give a false impression; viz., that I was breeding Brown Leghorns not true to their type. This and the tall statements he makes, and the braggadocio style in which he does it, I must confess, have irritated me enough to call forth this reply.

Mr. Kinney tells us he has the only white ear-lobed strain in the world; yet he tells us that he has read "with pleasure" an article on the ear-lobes of Brown Leghorns in the "Bulletin" of December, 1872.

I presume that which pleased him most in that article was, that the "writer's experience, and that of Mr. Wheeler, of Worcester, Mr. Beard, of Nashua, N. H., and Mr. Jacob Graves, of Boston, was that not one-twentieth part of all the Brown Leghorns had white ear-lobes, and that of the twentieth part of them that had, three-fourths were very defective in plumage;" and as Mr. Wheeler is a neighbor of Mr. Kinney, he ought to know whereof he speaks. As regards the article alluded to, I myself call it a good and truthful one. The writer also says: "If we, to attain this one point, are to sacrifice the rich, beautiful black breast, elegant striped hackle, and handsome shoulder coverts and wing-bar, which are certainly of more importance, what have we gained?" So much for what pleases him to read.

He tells us in his first article ("Bulletin" for June) that he had the first Brown Leghorns that came to this country and that their ear-lobes were entirely red, and that the next two importations he made were like the others. He also says they were not Black Red Leghorns, but Brown Red. In 1866, he says he had a hen from Leghorns with white ear-lobes. But before he states this fact, he speaks of an advertisement in 1864, of Brown Leghorns with white ear-lobes, and goes on to tell how they probably came about, giving the impression that those advertised were not pure in blood. Was this gentlemanly and honorable, or, reader, do you call it a stab in the back as regards its influence upon the reputation of the advertiser? In the same article he tells of a hen imported in 1866, having a small comb, which, crossed with his, produced fowls, in a few generations, that weighed eight pounds. Following this, he says he breeds for profit, and does not propose to sacrifice twenty years of labor in the perfection of his fowls, because young breeders want things gamy,

and says they can have Brown Leghorns like Black Red Games "by crossing with that breed. But the time will come when breeders will know the difference between crosses and thoroughbred stock."

Here I leave his first article to review his second, which is found in the "Bulletin" of September, 1873; and almost the first thing he tells you is that "he has learned how to mate his fowls so as to retain the beautiful pencilings in the hens and produce black-breasted cocks, or mottled-breasted, as six hundred chickens in his yard will show." If I were in his place, I should suppose people would very naturally think there had been an introduction of a Brown Red Game cock, in accordance with the advice of Article I. But again he seems to forget himself, and tells I. K. Felch, in the "Poultry World," he "may have his Black Red Games," and that one may "as well compare Black Hamburgs with Black Cochins as to compare Brown Leghorns with Black Red Games." Wonderful consistency!

His peculiar forcing system he should give to the world, for he says he can make his fowls weigh two pounds more than the farmer can with "good farmer's care." This may account for his eight-pound cock; this may also account for his strain weighing two pounds more than any strain of Brown Leghorns I ever saw.

But wonders do not cease here. Old Red Ribbon! Who of my readers ever before heard of a hen which, in eight years and ten months, laid the marvelous number of 2,200 eggs? And who before ever heard of a breeder chalking down every egg a hen laid for nearly nine years? Two hundred and forty-one eggs each year for eight years and ten months of the laying life of a hen! But Mr. Kinney must have forgotten one item, or else is reserving it for a further surprise for the poultry breeders of America, viz: the number of eggs "Old Red Ribbon" laid in her most productive year. According to the ratio of production by other fowls, it could not be less than four hundred. Was the account in his "Poultry World" article of these old hens among the farmers, from ten to twenty-one years old, a dish served up as an appetizer, that his readers might swallow his statistics in relation to Old Red Ribbon? Unless he tells us who collected the eggs from Old Red Ribbon and Signora while he was "traveling over that large extent of country" he speaks of, or presents for inspection the original entries of the account, he must excuse me for doubting the account, or kind o' thinking Old Red Ribbon might be like a hen that was owned by a boy who used to live with an uncle of mine, who was wont to assert that he had seen twelve eggs laid by that hen with shells colored seven different shades. Now, it was hard work for my uncle not to believe that six of his hens helped that hen lay those twelve eggs; but the boy saw his hen lay them all, and, as he was a boy of truth, he had to believe that the hen laid different colored eggs.

In conclusion, if Mr. Kinney's fowls are all he represents them to be, what occasion has he to pull down his neighbor's house that he may build a barn? But he does this: First, by attempting to establish his strain as the only one of white ear-lobes, and then throwing suspicion on his neighbor, who in his very article he acknowledges advertised two years he shows that he received his white ear-lobed hen, from which he commenced to breed into his stock this characteristic. Second, by asserting that he can grow these very chicks two pounds larger than his neighboring farmers can with good care, by some hidden process of forcing, which, if true, is all right; but is it likely that size can, in a short time, be increased fifty per cent? Thirdly, by the publication of marvelous productions of eggs, which may best be dismissed with the navy saying: "Tell that to the horse-marines; the sailors won't believe it." Fourthly, by misconstruction and use of personalities in comparing the writing of others with that of his own in relation to the merits of his fowls; all of which will lead the unthinking novice in breeding to come to his net.

I do not care a straw for his allusion to what I said of Brown Leghorns as they were in earlier days. I do not now breed Brown Leghorns, and I do not cry out because he is in any way injuring my business. But when people write of poultry, I like to see it done with some degree of fairness. But, closing, I will say I do not want a Leghorn, be it White or Brown, as large as a Brahma, or a cock that has Golden Hamburg plumage.

In September, 1875, the "Poultry World" published a letter written by O. H. Peck, of Franklin, Mass., which contained the following statements regarding the first importations of "Leghorns" in America:

For a year past there have appeared in "The Poultry World" quite a number of articles on the origin of Brown Leghorn fowls. The articles in question having been written by eminent breeders of said variety, it may appear presumptious in me to attempt to add anything to what has already been said; but with your kind permission, I will state that about forty years ago, Mr. N. O. Ward, of Fulton Street, New York City (the then celebrated cracker baker) received a few of these fowls as a present, direct from Leghorn. This is, I think, the first record we have of them in America. The eggs from these fowls were distributed among his friends, one of whom was Mr. J. C. Thompson, of Tompkinsville, Staten Island—once an eminent poultry raiser, now deceased. Mr. Thompson writes as follows:

"I raised from six eggs, five cocks and one pullet. The size of the comb and wattles of that lot exceeded any-

3. S. C. WHITE LEGHORNS OF C. A. PITKIN, 1873.

thing I have ever seen since. The length of the combs (actual measurement) was six inches. The comb extended so far out over the beak, that it was in the way of their picking up grains, and they were compelled to press the protruding comb on one side to get their bills to the ground."

On two or three occasions subsequent to this, Mr. Thompson obtained the fowls direct from Leghorn, once through his son-in-law, who was master of a vessel. They matured early, pullets laying at four months old; and Mr. Thompson was of the opinion that they oftentimes died from exhaustion, actually laying themselves to death. I once knew of a party who had them and sold the eggs under the name of "Sicilian Fowls." That they are excellent layers, no one will question, for they will lay more eggs in a given time, than any other pure-bred fowl known.

An attempt was made by an American poultry breeder, to investigate the origin of "Leghorns" in their native land. How this failed to accomplish satisfactory results is clearly explained in an article written by J. H. Davis, an old and well-known writer on poultry topics, for the "Fancier's Gazette" some twenty years ago. We reprint the following extracts from Mr. Davis' interesting summary:

Twenty or more years ago there was a little book issued, bearing the above title, by F. H. Ayres, of Mystic River, Connecticut. Mr. Ayres conceived the plan in 1878, of visiting the great Paris Exposition for the purpose of looking over the fowls placed on exhibition there, and then going to Italy to hunt for Leghorns, as he desired to bring home with him all the varieties and colors obtainable.

Arriving at Marseilles, he at once proceeded to look at the fowls in the Zoological Garden. Here he found

Peafowls, White Pheasants, a fowl that looked like a White Leghorn, but rumpless; also a rumpless fowl with Plymouth Rock plumage, and a big black rumpless cock with feathered legs and a crest nearly four inches high. All these were in one pen. In another pen was a bird resembling a Hamburg, with rose comb, yellow hackle, plumage yellowish brown, blue legs and half-white earlobes. Then there were Japanese Bantams and a coop of fowls resembling Silver Hamburgs, but about half the size, the most of which had red ear-lobes, the plumage being yellowish white. Then there was a pen of Sultans, and poor specimens of Golden, Silver and Mottled Polish. Many other varieties of birds were found here, but no Leghorns, which the tourist was in quest of.

He next went to Leghorn, a city of a hundred thousand inhabitants, and the first place he visited was the market, in search of Leghorns. There were hundreds of fowls on sale. The proprietor or overseer of the market explained to Mr. Ayres that he had men out with handcarts gathering up fowls in all directions, some of them going as far as fifty miles for birds. Occasionally they extend their trips as far as the Adriatic Sea, on the opposite side of Italy, and to Rome. Curiously enough, the writer does not mention the fact that he saw during his trip abroad either a Brown, White or Pure Black Leghorn, and the book winds up with the writer's visit to Leghorn. He does say, however, that "The black fowl is the favorite fowl in Italy." He also wrote that of the thousands of fowl he saw outside the gates of Leghorn, nine out of every ten were jet black without admixture of any other color, and these fowls had single combs, all of them.

In this connection we mention the fact that the Brown Leghorn was the first to appear in America as a distinctive Leghorn breed. Then came the Whites, and afterwards the Blacks. Another thing should be remembered; that all the Brown, White and Black Leghorns of the earlier days had single combs, and that the rose combs did not come until recently, especially the rose comb Browns. Mr. Ayres gave Reed Watson, of East Windsor Hill, Conn., credit for introducing the first Black Leghorns in this country from abroad, though he admits that many Black Leghorns had been made in this country before Mr. Watson's importation, from sports of Dominique Leghorns, and that these black sports bred together produced true Black Leghorns in every particular.

Mr. Ayres brought no Leghorns home from Italy with him. If he did, he does not mention it. Perhaps he was grievously disappointed in not finding what he was in search of. He says, in conclusion, that in all his travels in Italy he did not see a rose comb fowl, and gives it as his opinion that all rose combs were made in America. He further stated that most of the fowls he saw there were good Leghorn shape, but he saw no pure breeds, unless it was the Blacks.

Now I want to ask: Where the Brown and White Leghorns came from? Surely not from Italy. There is no record anywhere, and I have searched faithfully for it, to show that a Brown or White Leghorn was ever imported from Italy in the early days. No tourist ever saw one there, and they were never there, unless imported from this country in later years. The conclusion, then, is that the Brown and White Leghorns are purely American breeds, which I have long maintained and must adhere to. The principal factor in making the Brown Leghorn was the Black Breasted Red Game. What other cross was used I am at a loss to determine. The male Brown Leghorns of earlier days were much like the Black Reds; so much so as to be often mistaken for them, and they possessed all the pugnacity of the Games. The Brown Red Games were also introduced in the cross.

To sum up, then, from all the data at hand, and after the most critical search for facts concerning the Leghorns, the only conclusion that can be reached is that we are not indebted to Italy for the Leghorns; that they did not originate there, and that they are purely an American breed, just as much as the Wyandottes or Plymouth Rocks are American breeds. Then let us speak of this favorite breed of fowls not as from Italy, or in the Mediterranean class, but as American fowls, in the American class.

None will dispute Mr. Davis' patriotic sentiments, even if his claims, especially as to the origin of White and Black Leghorns, are not well supported by authentic data.

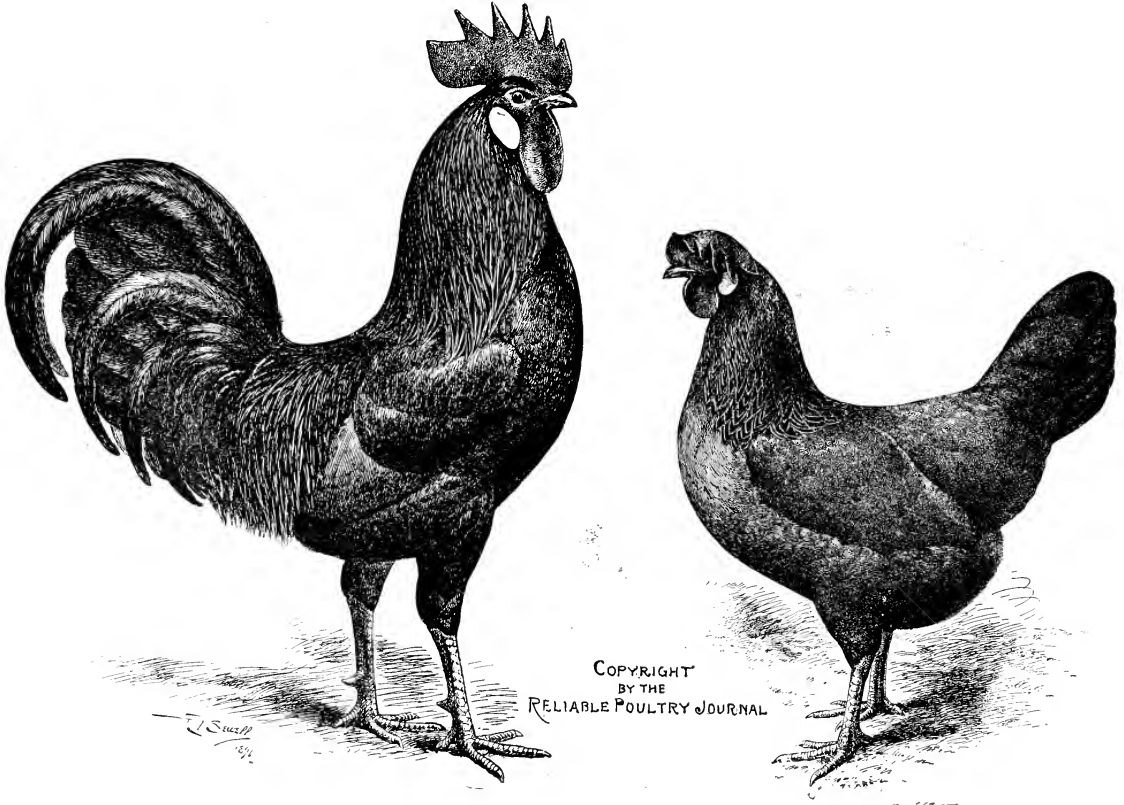
H. H. Stoddard, in his "New Book on the Brown Leghorn," sums up the history of the origin of the color and form of Brown Leghorns in the following intelligent and impartial language:

4. BLACK LEGHORNS IN 1875.

This old print appeared in the December Poultry World, 1875. The cut was engraved by Mr. Porter, then considered the best delineator of fowl, the subject being a pair of Black Leghorns owned by C. E. L. Hayward, New Hampshire, one of the most successful breeders of this variety since its admission to the Standard in 1874.

> To us the origin of the name of the Leghorn fowl is not as interesting as the origin of those peculiarities which distinguish the breed. Color of plumage may be nothing remarkable. We have the White, Black and Brown and Dominique. These colors, on domesticated fowls, without care, would be mixed in many specimens, and the Leghorn would really be a speckled fowl. But who has not observed, in flocks of native fowls that have been bred without any choice of color, how in a few years, the red-hackled cock appears, with the black breast, and the "brown hen?" This seems to be a natural arrangement of color when breeding for color is not an object of attention. Hence it is reasonable to suppose that the Brown Leghorn, in its native clime, may have the most natural color among the black, white and mixed.

The doctrine recently advanced by an eminent writer on poultry that all breeds of fowls tend to grow lighter in color, may be pronounced decidedly erroneous. If this were the case, then on farms the flocks bred hap-hazard style would all have become snow-white long ago. The truth is, domestication causes the color of pigeons and poultry of all kinds, in common with horses, dogs, sheep, cattle and all other domestic animals, to scatter in all directions. There is a constant tendency toward white, black, brown, yellow, mottled, pied, brindled, spotted, "ring-streaked, speckled and grizzled." But there is no more gravitation toward light colors than toward dark ones. Black sheep appear persistently, in spite of continued weeding. White and black horses start up in a strain of bays. No matter what the uniform color of a race of birds or quadrupeds is in a state of nature, domesticate it, and owing to a change of food, or to some unknown cause or combination of artificial influences, the stock branches out in a few generations, to a great diversity of colors. Now, with fowls there is not only a constant tendency to this scattering of color, but also a conflicting tendency to the reversion to the primitive type of the Gallus Bankiva, the parent wild stock, which is colored very much like our Standard Brown Leghorns of today. Therefore the persistent appearance in the barnyard fowls of Italy of the Brown variety of Leghorns among black, white and speckled specimens, is but the assertion of the original tendency of the race, and the



Standard Leghorn Male and Female Shape, 1896

Ideal Leghorns, illustrated by Franklane L. Sewell, under the suggestions of sixty-eight prominent Judges and Breeders. The type illustrated above was popular fifteen years ago.

brown type of Italian fowls with black breasted males may be looked upon as carrying the inborn marks of their ancient lineage.

But, what produces the shape, and the lithe and lively qualities? There is a "blue blood" and a fineness about this breed which we may best account for by the climate where they have lived for ages. What makes the difference between the quick, impulsive Italian and Frenchman, and the native of northern Europe? Is it not the long-continued direct and indirect influence of the climate?

But, besides the influence of climate, what naturalists call correlative development has much to do with it. By this term is meant that the growth of one part of the body of an animal affects the growth of other parts. Now what can we expect of a small or medium-sized fowl like the Brown Leghorn hen? Surely not meat enough to fill the stomachs of a large family at dinner! She flies around lively, and cannot, of course, lay on flesh. She is enterprising, and her very lightness and quickness render her able to go farther in a day, and, if at liberty, get a proportionately larger share of the good things, such as worms and insects, to make her lay eggs. While she is

5. S. C. BROWN LEGHORNS IN 1878.

doing this, a specimen of some larger breed will hang around the barn or shed, eat corn, lay few eggs, but develop a body amply sufficient in bulk to dine a company of six men.

There is a balancement in growing things. If nutriment flows to one part of the organism, another part must go lean. The cow that makes two pounds of butter per day will, very likely, present a body of skin and bones, after she has been at it a considerable time; while the Shorthorn, with ample proportions, bones well hung with fat, gives but little milk, with few oily globules. We never see a crest on a large comb, or find a beard and large wattles on the same fowl. A little crab-apple will have an abundance of seed in perfection. A cultivated apple, large, luscious, well-flavored, will have few seeds, and a portion of those in a state of atrophy.

Some one may ask if the sunny clime of Italy will cause monstrous combs to grow on fowls. We answer that the tendency of a cold climate is to make combs small. Men living in a cold country will select specimens with small combs as breeders, for the reason that large combs will invariably get frozen. But, in a mild country, a large comb may be cultivated, also those of curious or fantastic shape, as the French breeds.

There is a tendency among mankind to admire some extraordinary development, or something very small. It is not unreasonable to suppose that Italians, away back to the time of the Roman Empire, if you please, cultivated these high single combs and large wattles. Women care for poultry, to a great extent, in Europe, and these extravagant combs are of a piece with hair fixings sixteen inches high, hoops four feet in diameter, and shoes with heels stilted.

It cannot be denied that the people of a nation producing many artists will be very likely to select and breed domestic poultry with taste, and with an eye to the beautiful. Who does not think that the combs and wattles (not frozen) on a Leghorn are very pleasing?

But, however much or little the premeditated selection of the keepers may have effected in the matter of combs (and we are inclined to suspect that it has accomplished a great deal, not so much in originating the large combs as in perpetuating and intensifying the trait), the law of correlative development has come in play here also, no doubt, working slowly, but surely for ages. They have small bodies, and can afford to have large combs and full, large tails. No doubt man has much to do with this, but nature fixes these things so that they are suitable, and it is not difficult for man to fall in and help a little. How the Leghorn would look with a small comb and a Cochin tail! Intolerable, even with large egg production. It is easy to believe that a large body naturally has proportionately small appendages; so that when we get a fowl with a large, thick-set body, the tail and head fixings are small, not entirely through man's interference by selection.

We can give no reason for many things in nature but that they are so. Many other things are very plain. For instance, a wild dog carries his small ears erect, because he must listen almost constantly, in his wild condition, in order to get a living; but generally the tame dog has large lopped ears, because he is free, in his tame condition, from the necessity of constant watching, and the muscles of the ear become lax by disuse. Use has much to do with development. Note the muscles of the blacksmith's arm. The Brown Leghorn has large wings. Why? Activity accounts for it; also, in a measure, for the size of the tail. Watch one of this breed, and you will see the head move quickly and often. Does not this cause rapid and full circulation of blood and help to develop large comb and wattles?

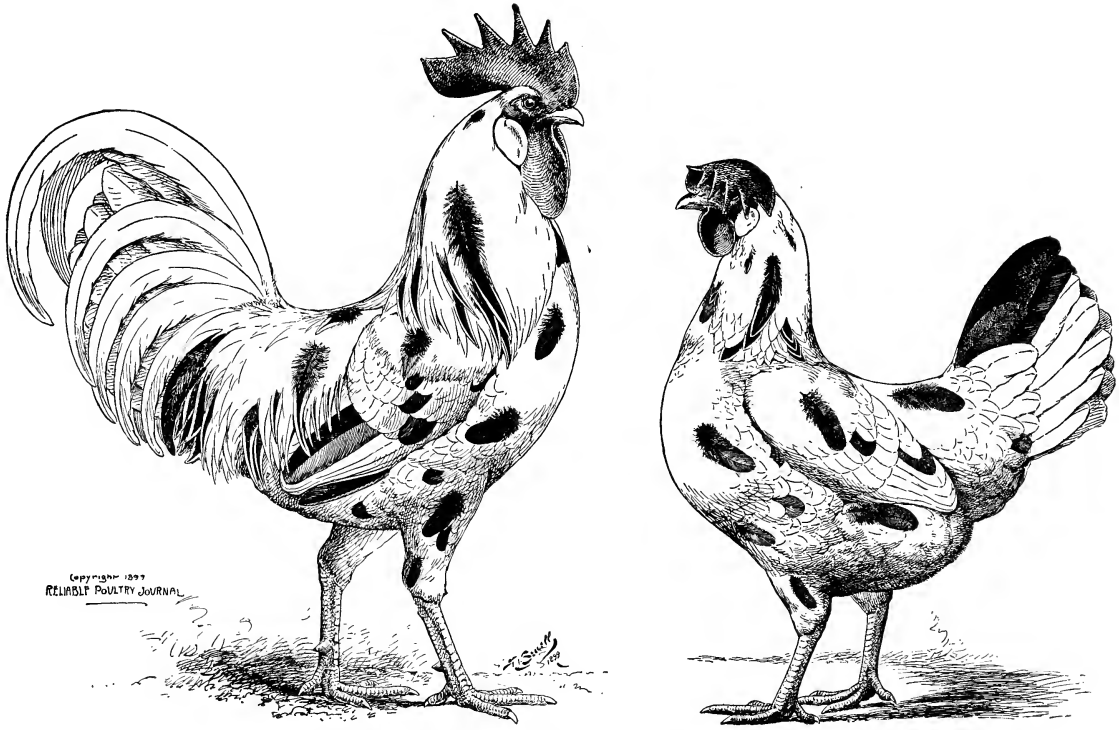
First White Leghorns

Whether the ancestral blood was pure Spanish or blended with the latter by the blood of the "Italiens," the undisputed fact remains that the first White Leghorns appeared in Uncle Sam's domain, and the first trio to arrive in England left America's shores in 1869. Of this importation to Great Britain, the well-known English poultry authority, W. B. Tegetmeier, in his book "Poultry for the Table and Market versus Fancy Fowls," London, 1893, writes as follows:

Another breed, which obviously originated on the shores of the Mediterranean, is the Leghorn, which was first known as a yellow-legged, white-plumaged variety. The birds shown in the engraving (see Fig. 1) were those first introduced into this country by myself from America in the year 1869. The Leghorn is also a non-sitter and a most prolific layer of white eggs. It has lately come into greater fashion as a show-fowl, and various colors have been developed in the plumage. The co-called Brown Leghorns have been made by crossing with the Black-Red Game, and recently a breed, with much white in its composition, called Pyle Leghorns, and other colors, such as Black, Buff and Cuckoo, have been produced. Leghorns are generally smaller than the Minorcas or Andalusians.

The engraving on page 7 is a very accurate representation of the first trio of White Leghorns which was imported to this country by myself in 1869. Not having been bred for show points, they were most prolific, and promised to become a very useful addition to our egg-producing breeds; but, having been raised to the dignity of an exhibition fowl, more attention has been paid to their white earlobes and serrated combs than to their prolificacy.

Leghorn breeders who have taken the trouble to study the history of the breed admit that W. Simpson of New York City, was the first breeder of White Leghorns in the United States. W. J. Fullerton, a Canadian breeder of White Leghorns, made a careful search of the early records relating to his favorite variety, and incorporated the following data found by him, in an article published in the "Canadian Poultry Advocate" some five or six years ago:

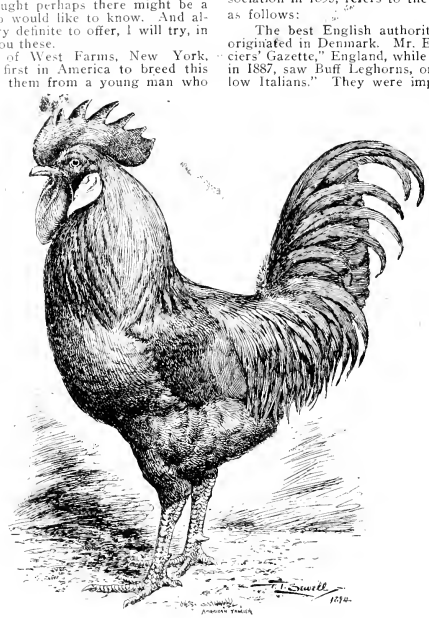


Leghorn Shape and Color Sections Male and Female

The above illustration is reproduced from the chart outline sketches by Franklane L. Sewell, which appeared in the 1904 edition of "The Leghorns." They represent the ideal male and female shape in vogue ten or twelve years ago. The black and gray markings represent the different color sections of Brown Leghorn males and females, no color charts of such markings being in existence at that time. The new color chart of Brown Leghorn male and female feathers printed in this book will, however, convey a much clearer and more lasting impression of the fine color markings of such feathers.

I have been breeding the S. C. White Leghorns for a number of years now, and I have often thought I would like to know something of the history or origin of this grand breed of fowl, but whenever I have asked the older breeders than myself and men who have been breeding the Leghorns for years, they invariably say: "I don't know; I can't tell you." But I have managed to pick up a few odd notes, and thought perhaps there might be a few more like myself who would like to know. And although I have nothing very definite to offer, I will try, in my humble way, to give you these.

A Mr. W. Simpson, of West Farms, New York, claimed that he was the first in America to breed this variety of fowls. He got them from a young man who had them on board his ship, but what port the ship came from he did not learn. This was in the year 1853; he got one cock, four white hens and one Blue Leghorn hen. They differed from the fowl of the present day in that they were somewhat larger and had white legs. He bred these fowl in and in, before he could get any fresh blood to cross with them, and from the blue hen he bred some magnificent Dominique Leghorns which he exhibited at the American Institute Fair in New York, several years, where they attracted much attention. But, being a new breed, no prize was offered for them. About the year 1860, he says, some importations of yellow-legged birds were made, and that color being preferred, the white-legged ones soon disappeared. He is of the opinion that the yellow legs and hardiness together have been introduced by a cross with the Asiatic, to which the American breeders are very prone, and which is known to produce good results. Mr. Simpson was of the opinion that the character of the head and shape of the body were decidedly of Spanish appearance, with nice red combs and wattles, and pure white ear-lobes, and white plumage.



6. BUFF LEGHORN COCKEREL, 1894.

Mr. Simpson stated that the White Leghorn was not a superior table fowl, but very passable, but that it was a remarkably good layer of large, white eggs, and was a non-sitter.

Mr. Simpson also stated that in the year 1854 five hens laid 954 eggs; in the year 1856 ten hens laid a total of 1,528 eggs, and in the year 1858 five hens produced 813 eggs.

The American Agriculturist of March, 1869, contained an article on White Leghorns, with an illustration, in which the editor stated that his knowledge of the breed dated back for about ten years, and described the bird as follows: Rich, yellow legs, single comb, white ear-lobes and white plumage, and somewhat resembling Hamburgs in shape. He stated that recent importations were from Leghorn, and not from Spain.

Whether the original blood that produced the White Leghorn flowed in the veins of Spanish or Italian fowls, may have caused discussion more or less warm in the olden times, breeders today are satisfied to class White Leghorns as an American production selected by intelligent breeders of fifty or more years ago, from the Mediterranean breeds imported into America in the middle of the nineteenth century.

Origin of Buff Leghorns

A. Armstrong, Petaluma, California, in an essay on Buff Leghorns, written for the Los Angeles Poultry Association in 1895, refers to the origin of this new variety, as follows:

The best English authorities claim that this breed originated in Denmark. Mr. Edward Brown of the "Fanciers' Gazette," England, while at the show in Copenhagen in 1887, saw Buff Leghorns, or as they were called "Yellow Italians." They were imported to England in 1888, from that time attracting the attention of the English fanciers. When I first read this statement I knew not whether to believe it or not, as there were so many fanciers attacking the breed and claiming it was manufactured by crossing the Brown and White Leghorns, Mrs. Lister Kay contending that such a cross could not produce Buff, but Pyle Leghorns. In an interview with Mr. T. Sachan, a native of Denmark, and a reliable man, now living in San Leandro, California, he told me that the Buff Leghorns were a genuine breed and that his father kept them in Denmark twenty-five years ago; and he remembered well gathering the large eggs for his father. He said: "They were called 'Yellow Italians' and were considered the most profitable breed in Denmark." As Mr. Sachan was not a breeder, and in no way connected with the industry, his unbiased statement convinced me that they did originate in Denmark, or at least were known there for over a quarter of a century.

Introduction Into America

Mr. August D. Arnold, of Dillsburg, Pennsylvania, was, I believe, the first one to import them from England, the first lot arriving in 1890. I have always admired the buff color, and when I found I could get a Buff Leghorn, I was not long in taking them up. I claim to be the first breeder of this variety on the Pacific coast. The first Buffs I owned were a very great disappointment to me, as they had so much white in plumage and I came to the conclusion that no matter where they came from they had been sadly neglected,—in fact, it seemed a fraudulent transaction to offer eggs or birds for sale from a breed that did not breed truer to color than they did the first year of their introduction into the United States. I soon found, however, that there were many good specimens, and that by careful selection, good true Buff color could be produced. I have bred them four years and like them better than ever.

Mr. Hesford, in his book, "Leghorns of All Varieties," London, England, 1896, gives the following information relating to the formation of the Danish and English Buff Leghorns:

The Buff Leghorn is not like the Pyle and the Duckwing—a new variety. It belongs to the class already spoken of as "Italiens" and was somewhat common on

the Continent many years before it appeared in England. Though popularly known on the Continent as "Chamois," they were usually described in Denmark as "Yellows," and in the famous show at Copenhagen, in July, 1885, two pens so described were shown. It must be said, however, that only since their introduction into this country has there been any approach to a solid buff color, for the continental Chamois invariably had a white tail and flights, besides, in most cases, the buff color being practically a lacing, and the center of each feather being white or cream color.

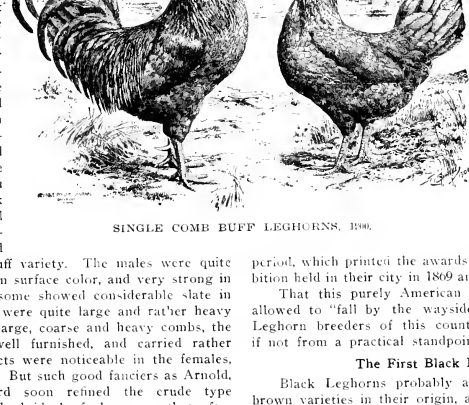
Mr. L. C. Verrey was one of the first to exhibit Buffs here, but the first importer—who by his own claim brought his first Buffs to England some weeks before Mr. Verrey—was Mr. T. Penfold-Field. Both these gentlemen showed Buffs for the first time at the L. P. R. and A. Club Show held at Derby in December, 1888. The former failed to score with a cockerel, but secured second and "highly commended" with pullets. The latter gentleman's exhibits did not gain any recognition from the judge.

We believe it was Mr. Field who sold and shipped to August D. Arnold the pen of Buff Leghorns first exhibited at the new Madison Square Garden in 1891. They resembled White Pyles more than they did Buffs, and did not meet with a favorable reception. But Mr. Arnold, whose pluck and persistence are well known, made other importations the year following and succeeded in obtaining some really strong colored Buff Leghorns from Mrs. Lister-Kay, including the Crystal Palace winners. As we judged the Leghorn classes at New York in those years, we had an excellent opportunity of handling and examining the new buff variety. The males were quite rich and fairly sound in surface color, and very strong in undercolor; although some showed considerable slate in the latter. The birds were quite large and rather heavy in body, having very large, coarse and heavy combs, the tails being none too well furnished, and carried rather high. The same defects were noticeable in the females, but in a lesser degree. But such good fanciers as Arnold, Wheeler, and Shepherd soon refined the crude type to the American Standard ideal of shape; so that after 1895 the improvement of the Buff in color and shape was rapid. The illustration, Fig. 6, of Mrs. W. P. Wheeler's first prize cockerel at Madison Square Garden, New York, 1894, is a good portrait of the male type in vogue at that period. A comparison of this type with the modern, Standard-bred Buff Leghorn winners at our leading shows, will convey the great progress made in the past fifteen years, in shape of body, carriage and shape of tail, and in comb and head points.

That the English strains of Buff Leghorns were of different blood from the Danish "Chamois," there can be no doubt, the heavy bodies, greater size and large combs being foreign to the yellow fowls of Denmark. Lewis Wright, in his book, "The Practical Poultry Keeper," London, England, 1899, remarks: "Buff Leghorns have become very numerous and popular. They appear to have been bred from Italian stock, crossed with weedy Buff Cochins. The crossing has introduced much difficulty in breeding sound, rich buff unmixed with white or black; but the color seems to suit the close plumage of this fowl particularly well."

This Cochin-Italian cross furnished the foundation blood of the present day Buff Leghorn, but the introduction of American White and Brown Leghorn blood into some strains, we suspect, did more to improve the shape and style of the Buff Leghorns in this country, than the careful selection, year after year, of the most typical specimens in the progeny of the English strain of Buff Leghorns alone.

But, while the Buff Leghorns of today may be the lineal descendants of those imported from England and exhibited in 1892, and afterward in America, their progenitors cannot claim to have been the first Buff Leghorns exhibited in this or any other country. As far back as 1869 Single Comb Buff Leghorns were exhibited at New Haven, Conn., by John G. Moore, and 1871 C. E. Clinton, who was Secretary of the Connecticut State Poultry Association, exhibited a string of Buff Leghorns at the New Haven show. They were smaller than the Buff Leghorns of today, but were fairly good in color. We are indebted to the late C. P. Nettleton, Shelton, Conn., for the above facts, the latter being substantiated by several clippings from the New Haven papers of that period, which printed the awards and reports of the exhibition held in their city in 1869 and 1871.



SINGLE COMB BUFF LEGHORNS, 1900.

That this purely American strain of Leghorns was allowed to "fall by the wayside" will be regretted by Leghorn breeders of this country, from a sentimental, if not from a practical standpoint.

The First Black Leghorns

Black Leghorns probably antedated the white and brown varieties in their origin, as they appeared to have been quite common in Italy long before they became known as Leghorns, or the other varieties were found. But their actual appearance as a recognized Standard variety was in 1874. The "Poultry World" of December, 1875, gives the following history of Black Leghorns:

The first importation of this breed from Italy, regularly bred from, of which we have any authentic account, was made in 1871, by Mr. Reed Watson, although stray specimens of black or very dark fowls were no doubt brought over at various earlier times. Saunders' "Domestic Poultry," published in 1866, says:

"There have been several importations of the common fowls of Leghorn and vicinity, made of late. These birds are of all colors except black." By which we infer that the breed under consideration was at that time unknown to the author cited. Wright makes no mention of any Leghorns of this character. There are traditions, however, of several dark or black hens having been found among the Brown Leghorns brought to this country at

various times since 1853. The first published account of Black Leghorns appeared as an editorial in this magazine, page 126, October, 1872. Since then they have become widely known. We quote:

"Mr. Reed Watson, of East Windsor Hill, Conn., has some Leghorn fowls direct from the vessel in which they were imported from Italy. We lately spent a day, and consider the day well spent, in visiting them, for such importations are rare. Mr. Watson's birds show the unmistakable Leghorn form, even to the details of comb and wattles, and are as thoroughly non-sitters as any of our acclimated strains. They are very vigorous and active. The original fowls, three in number, imported a year ago, are now surrounded by a well-grown and numerous family. The old hens have proved themselves remarkably prolific layers, and the pullets of last April are following the example. A brood of a dozen chicks can be seen, hatched September 1st, from eggs laid by pullets of this stock, hatched after the middle of April last,—that is, the pullets reproduced when less than four months old."

Two years later Mr. Watson made another importation, which is referred to in the "Poultry World" as follows:

Although the Standard for this breed was framed in accordance with specimens shown at Buffalo, of Mr. Watson's first importation, and although the strain was largely sold and has been bred from in all parts of the country, still it has never thrown as true as is desirable; and it did not satisfy the aspirations of its importer, who therefore resolved to try again, and accordingly commissioned an agent to select by the Standard some fowls in Italy that would breed according to the Standard. The birds arrived last July, and Mr. Watson informs us, after raising a large number of chicks the past summer and fall, that they breed remarkably uniformly and true to their type.

The following original documents placed in our hands, we publish, so that the history of this last importation may be established correctly:

Genoa, Italy, May 3, 1876.

Reed Watson, Esq., East Windsor Hill.

Dear Sir:—I have delayed answering your favor of January, for the reason that I desired to find the fowls before doing so. I have sent to Leghorn and other places, to my friends, to try to get the real Black Leghorns, and I have also visited the markets in this place daily, looking at everything of interest, as regards fowls, and I have, I think, found the nearest points to the description given of Black Leghorns that can be found in Italy, and have purchased one cock and four hens. It is the only cock that came near the description, that I have ever seen. I have also two small young chickens, different from anything I ever saw: Color, gray, with soft feathers, or hair, as it may be termed. I have sent to the island of Sardinia for a kind of fowl which they have there, but am afraid it will not arrive in time for me to take home, but I shall have them shipped, when they get here, to New York. I shall leave in a few days for New York, and will drop you a line on arrival there. Yours truly,

THOS. TAPLEY.

Bark Ironsides.

New York, July 14, 1876.

Reed Watson, East Windsor Hill.

Dear Sir:—In great haste I drop you a few lines, that you may know that the bark "Ironsides" has arrived, and has on board two cocks and three hens. If they suit, take them away, as they can remain on board in care of mate till the vessel is discharged. Vessel is at Pier 54, East River, New York Marble Yard. Yours truly,

THOS. TAPLEY.

The American strains of Black Leghorns still existing in this country, no doubt, trace their lineage back to the Watson birds, but most of the exhibition specimens in recent years were imported from England, American and Canadian breeders finding better color of plumage and shanks, as well as whiter ear-lobes, in the English strains.

Silver Duckwing Leghorns First Exhibited in England

Silver Duckwing Leghorns were admitted to the American Standard of Perfection in 1898, the same year the Buff Leghorns were recognized as a Standard variety. As their origin is English, we must look to England's authorities on poultry history for the facts relating to the formation of this new and handsome variety of the Leghorn family. Mr. Hesford devotes a long chapter to the origin and history of the Duckwing Leghorn in his book, from which we glean the following:

The Duckwing takes its name from the similarity of the steel blue wing-bar to that of the Mallard or Wild Duck, and this name was first given to a sub-variety of Game fowls. In this latter fact lies the raison d'etre, probably, of the Duckwing Leghorn. There were Black Red Game, White Game, and Pyle Game—colors which can be found in Leghorns. Why not a further imitation—Duckwing Leghorns? This, at least by one of the claimants to the distinction of having created "Duckwings," is given as the reason for his experiments. Looking to the fact that this gentleman's energy was, however, admittedly being devoted to the production of Pyle Leghorns, and that in the same year in which Pyles were first shown, a Duckwing cockerel was shown by another breeder, it may be safely said that the creation of Pyles had nothing to do with the first idea of Duckwings.

This brings us at one and the same time to the history of the Duckwing and the respective claims of its "originators." Mr. R. Terrot, upon whose authority we speak, showed at the Crystal Palace Show in 1886, a Duckwing Leghorn cockerel in the variety Leghorn class, winning second prize. This was the first Duckwing Leghorn ever shown in the world. Mr. Terrot afterwards showed two at Derby Show, winning second and "highly commended;" and not till the end of 1887 did anyone else show a Duckwing Leghorn. This forms the ground for Mr. Terrot's claim, and it cannot be denied that it is substantial.

To Mr. Terrot, then, in our opinion, must be given whatever credit is due for the idea. To its successful carrying out in extenso, Mr. G. Payne can just as rightly lay claim, for whether the latter had his thoughts turned in the direction of "Duckwings" by sight of the 1886 bird or not, he certainly showed Duckwing pullets, as well as cockerels, at one show before anyone else.

Just as we have given the facts above, so did they appear in two letters which appeared in a poultry journal in May, 1889; though, curiously enough, Mr. Terrot's claim and statement brought forth no reply, apparently, from Mr. Payne; but the second letter, signed "Anti-Duckwing," showed such a knowledge of the subject that it has been thought that it was inspired, if not written, by Mr. Payne. Be that as it may, we have the conclusive fact that to Mr. Terrot's actual claim, Mr. Payne, the only person who could have an interest in the matter, made no public demur.

What, then, can we conclude? Only that Mr. Terrot had manufactured Duckwing cockerels from such materials that it was well-nigh impossible to breed good pullets from the same; and that Mr. Payne had in his possession something (perhaps sports from his "Pyle") which supplied the missing link. But what, comes the question, did Mr. Payne do to breed cockerels, since it was only pullets he evidently had the material for? Thereby hangs a tale—if an attempt at a joke might be excused, we might say "a long tail"—a tail which, found in Belgium, reached eventually to England, and "bits" of which may yet be discovered "still growing."

Mr. Terrot's own description of the material used by him will, to the student, at once show the reason for his failure to produce good Duckwing pullets. In the first place, a Duckwing Game cock was mated to Silver Grey Dorking hens, and the progeny of these, crossed with pure Brown Leghorns. Few, very few, would be four-toed cockerels from such parentage, but a surgical operation would be necessary to produce pullets. Now we come to absolutely safe ground, and we state, for the very best reasons, that Mr. Payne's Duckwing pullets were not in any way Dorking bred. We said "for the best of reasons," and what that reason is we will state. Within two or three years of the origin of Duckwings we purchased the entire stock—"lock, stock and barrel"—in Mr. Payne's yard, and from that date to the present moment, although we bred from almost every bird purchased, and have hatched upwards of one thousand chicks, we have never

seen a five-toed bird amongst our stock. To those who know the remarkable way in which the merest dash of alien blood will assuredly display itself—how the characteristic points of the breed from which such a drop is taken, will at times appear—the reason will be all-sufficient justification for our statement that the production of Duckwings by Mr. Terrot and Mr. Payne was conducted on very dissimilar lines.

As to the material used by Mr. Payne, we are to some extent compelled to be suppositious, for though very clearly and in detail described are the stages of the Pyle's evolution, he has never taken the "fancy" into his confidence with regard to Duckwings, and his later letters on the "Golden" and "Silver" controversy have only served to darken the student's path. We have statements from three different sources which aid us not a little in forming our own conclusions:—

(1) That Pyle-bred sports (pullets) of a slatey or Andalusian body color, with underparts ashen gray, were used.

(2) That Phoenix fowls (or Shinowarataos) belong to the Game class, having all the various Game colors, including Duckwing, the female of the latter being a salmon-breasted greyfowl.

(3) Duckwing Leghorns combine the blood of nearly all the other varieties. The best material to use in breeding them is to select a few mis-marked pullets that occasionally appear when breeding for Pyles, and breed with a brown cock.

Add to the above statements that Mr. Payne did not produce Duckwings until having visited Belgium on show business, he espied some Phoenix fowl; that he purchased some of the latter and brought them to his own yards —and the matter lies in a nutshell. We have come to the conclusion that Mr. Payne tried to produce Duckwings from the material mentioned in No. 3 above; but what of the cockerels from such a mating? Here was a difficulty which the "Phoenix" solved; and, though early cockerels were more silvern than golden, they were passable Duckwings. It has been said that "Silvers" were the first to appear. We give an extract from an article by Mr. Payne which will tend to show that Goldens were quite an afterthought: "On part of the cockerels the beautiful black breast has become quite a feature. This I attribute to not insisting on a pure silvery top color. Personally I prefer a golden tinge, as it is less affected by the sun, and to my mind, sets the bird off better."

Later Mr. Payne has publicly stated that Silver Duckwings were produced from very different material to that used for Golden Duckwings, and existed before the latter.

However, we have got thus far, that they were originated by Mr. Terrot, and that Mr. Payne succeeded in breeding and showing birds of both sexes that have been reproduced. It is with the arrival of Mr. Huison on the scenes that the Duckwing Leghorn begins to evolve itself from "mongrelism" to become a typical bird breeding almost perfectly true. Mr. Huison, on the one hand, and Mr. Gerahty, on the other, have spared neither expense nor trouble in bringing the Duckwing Leghorn to the high state of perfection it has now attained; and without their support the "originators" would have had little reason to boast of their production.

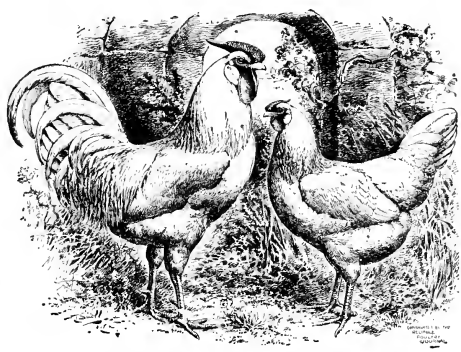
First Exhibited in America in 1894

Silver Duckwing Leghorns made their appearance in America in the beginning of the nineties, J. L. Hanchett, Westfield, Mass., making an exhibit at the Madison Square Garden, New York, February, 1894, our comments on the class in the "American Fancier" being as follows: "Duckwing Leghorns showed up well, especially the pen and a few of the pullets in the open class. This variety deserves attention, for it can be made a very handsome one." In 1895, at the New York Show, J. W. Fiske, Passaic, N. J., exhibited a fine string of Silver Duckwing Leghorns, our comments on these at the time being: "In 'Any Other Variety' Leghorns, the Silver Duckwing hen and pullets were the only features worth mentioning. They were excellent in shape and color, the hen showing more style than any other Leghorn in the Show."

The following year at New York Mr. Hanchett and Mr. Fiske exhibited Duckwing Leghorns, the honors being about equally divided between them. That the new variety showed decided improvement in quality, the following comments in the "American Fancier" indicate:

Silver Duckwing Leghorns made an interesting exhibit, the females being particularly good in style and color. We also noted one very promising cockerel of this variety, the hackle and saddle feathers showing some striping, and the sooner Dark Brahma hackle and saddle striping are cultivated on Duckwing Leghorns, the better.

Mr. Fiske was the only exhibitor of Duckwing Leghorns for several years after that, but no real interest was



ROSE COMB WHITE LEGHORNS, 1897.

taken in the new variety until 1906 and 1907, when fine classes were penned at the Madison Square Garden, E. G. Wyckoff, Exmoor Farms and Thomas Peer being the exhibitors. But in the past two years very few Silver Duckwing Leghorns have been exhibited at the winter shows.

Origin of Rose Comb Brown, White and Buff Leghorns

These three varieties differ only in the shape of the comb, from the single-combed varieties, from which they are commonly supposed to have descended, color and shape corresponding in all sections in both. The Browns and Whites have long been known and bred, being among the Standard varieties as far back as 1888. The Buffs were admitted to the Standard in 1878. All three are of American manufacture, no convenient skipper of some vessel being credited with bringing them over from sunny Italy to the United States.

The origin of these rose comb varieties is not an "open book." Supposition and imagination played important parts in the evolution of at least one of the trio, the Browns. T. F. McGrew, who has collected a valuable and large file of clippings relating to the early history of our domesticated races of poultry, kindly furnishes us with the following information relating to Rose Comb Browns:

Some people claim that the Leghorns with rose combs came originally from Italy; again, in early day clippings, I find that the first Browns that came had rose combs. Mr. H. D. Forbes, then of New Haven, Conn., stated that these combs were produced by crossing a rose comb cock with a single comb hen. Mr. Ayres went to Italy, came home and reported that he could not find a single rose combed Leghorn on the other side. At the Cleveland Show of 1881, I was called upon, with others, to examine some rose comb shows. We objected to the combs because they would have disqualified a Hamburgh. Following this, Mrs. M. L. Maples, Mystic River, Connecticut, not only claimed that they were original from the other side, but that the man who saw them taken from the vessel was then living in Mystic River, a Mr. Burrows. I always claimed that they were made from Hamburghs and Leghorns.

Mr. McGrew's own statement of the origin of Rose Comb Brown Leghorns is shared by the majority of Leghorn breeders today. The following history of the experience of T. J. McDaniel in originating Rose Comb Brown Leghorns, appeared in the "Poultry World," July, 1877:

I will give your readers a bit of experience in an attempt to originate and establish a new variety of Leghorns. And let me say, first, that I have no "axe to grind," nor eggs or fowls to sell, but simply write this article in the interest of the fraternity of poultrydom and to interest amateurs—perhaps amuse veterans—in the good cause. However, I will give a true account of my experiments as I made them.

In 1874 I had several hens of an old breed called "Yorks," and I used them only for sitters. They exceeded, in this capacity, any fowls I ever saw. Some were as dark as a male robin; all had rose combs. I crossed them with a Brown Leghorn male, and selecting only the rose comb chicks, put them in the hands of a neighbor to please whom I introduced them into my 1875 circular as "York County Fowls," but did not sell any for the reason that he became so enamoured of the work, and so enthusiastic in its pursuit, that wherever he saw a yellow-legged rose comb, if it possessed the color anywhere within a "gun-shot" of his desideratum, he would make a purchase and "throw (?) in new blood!" But last season, by procuring a male bird of the right kind, I succeeded in getting the color of plumage to suit my fancy.

This last cockerel was a first cross between a Golden Spangled Hamburg and Brown Leghorn, and had solid white ear lobes. He was just the bird I desired, throwing less than ten percent of yellow-legged pullets, and about one in every nine came with single combs. The plumage of his get was as closely allied to that of first-class Brown Leghorns as one bird to another of the same. Now, for my own gratification, I have gained quite a victory, for these rose combed fowls will now breed as true to color as any strain of Brown Leghorns in the world; i.e., if said Brown Leghorns are strictly Standard birds, with spotless pendant, lobes, etc.

I do not wish to write disparagingly of true Brown Leghorns, for they are the best layers in existence, excepting, perhaps, the Bolton Grays; but between a rose and single combed fowl there is, naturally, a difference of temperament, the latter possessing shyness and nervousness, invariably, that the former does not have; in fact, the flow of the circulation tending to the head, as it does in a Brown Leghorn, not infrequently produces all the symptoms that characterize cerebral apoplexy, which I have seen many times. A hen having a large leathery comb and red ear-lobes, in the best of her laying season, is the one most susceptible to this hyperenergia. But I never saw one so troubled if possessing a solid white ear lobe. So the ear lobe prevents this trouble—the only good that the unnatural appendage ever did, to my knowledge. But, with respect to this nervous difficulty, I would like to inquire if the Hamburgs, possessing, as they do, the same bulk of weight of comb, do not make better pets; are they not tamer and more docile? Therefore, if they do, they consume less food. I speak only from observation, never having bred them; but, assisting to judge the Hamburg class, after judging the Spanish alone, at the last exhibition of the Maine Poultry Association, I noticed this difference of temperament in a marked degree, as I had to handle hundreds of fowls in scaling; and I noticed further that the compact, low-stationed birds, and those having smaller combs also, were less active and irritable than the long-necked, high-built and heavy-combed birds.

Now, considering these points in favor of rose combs, together with less liability to frost, why not introduce "rose combed" Brown Leghorns as well as pea combed Partridge Cochins? Well, a neighbor has them, whether they are introduced to the public favor or not, and suffice it to say, they breed equally as true as Leghorns, are tamer, and now lay better; are heavier, but occasionally desire to sit; do not throw white feathers, nor have frozen combs, which is saying much in their favor.

Rose Comb White Leghorns were claimed to be sports of the Rose Comb Browns, by some breeders, while others maintain that they were made by crossing a rose comb white sport with a White Hamburg, Mr. James Forsyth, of Owego, N. Y., having successfully made such a cross twenty years ago. In some strains the Hamburg carriage and spread of tail are noticeable, and we might add, the Hamburg comb and lobes are also in evidence. Others again assert that rose combs are due to the visual influence in breeding, among the latter being Mr. Henry M. Ladd, of Cleveland, Ohio, who, in the September 21, 1901, issue of the "American Fancier," contributed the following article on this subject:

I have myself produced as fine Rose Comb White Leghorns as you would ever wish to see, simply by visual influence, without the introduction of any other blood than that of the Single Comb White Leghorn bred in line for many years, with never a rose comb in it. How was this done? Simply by having a pen of White Leghorns next to a pen of White Wyandottes in which was a magnificent White Wyandotte cockerel, so beautiful, so attractive and so seductive that one at least of the White Leghorn hens could not keep her delighted eyes off from him, and just at the right time when the egg was being endowed with life he appeared in sight to fill the eye, and as a result Rose Comb White Leghorns, perfect Leghorns in type, size, shape and everything, bred in single comb line throughout a long ancestry, but topped off now for the first time with a handsome rose comb. I have been able to produce several such handsome male birds, obtained solely in this way, and I am of the opinion that Rose Comb White Leghorns bred in this way will prove more reliable as breeders of the rose comb variety, than those originally obtained by a mixture of different breeds. I believe them to be very highly valuable birds, worth many times what an ordinary rose comb is worth—in fact, I would not have an ordinary rose comb. In this case the blood is pure and the visual influence pervasive and deeply stamping into the very being of the bird the rose comb tendency. Where it is the result of the introduction of other blood the rose comb tendency is only partial and fractional.

Rose Comb Buff Leghorns were produced by crossing Single Comb Buffs with Rose Comb Leghorns—at least, that is the claim made by some of the early breeders of the variety. But it is generally believed that some of the eastern strains of Rose Comb Buffs were made by using Buff Wyandottes and Single Comb Buff Leghorns, the large bodies, good color, heavy coarse combs, and almost reddish ear lobes, indicating the blood of the larger breed mentioned—at least in the specimens we handled ten years ago. Since that time they have been toned down and refined into true Leghorn type.

Non-Standard Varieties of Leghorns

There are eight varieties of Leghorns that are not classed at present among the Standard-bred Leghorns; namely, Cuckoo or Dominique, Blues, Golden Duckwing, Red Pyle, Columbian, Birchen, Mottled or Spangled, and Rose Comb Black. The very latest variety is the Red Leghorn now being perfected in this country. Of the

latter Red Pyle Leghorns are the most popular, especially in England, where they have been bred for quite a number of years. Of the

Origin of Red Pyle Leghorns

Mr. Hesford, in his book, "Leghorns of All Varieties," presents the following authentic data:

Pyle Leghorns, unlike the varieties before mentioned, owe their origin to the skill of an English breeder. Browns, Whites, Blacks, Cuckoos, Buffs, and even Mottles are "foreigners," but the gorgeous "Pyle" is of home manufacture. This is, or should be, a point in its favor with patriots; but perhaps more stress might be laid upon its claim to Leghorn purity. Bred, as we know from the originator's story, from Leghorns exclusively, it cannot be dubbed a "mongrel," although how far this purity is sustained, now it is kept and exhibited by many in addition to its originator, is a somewhat moot point.

We have already spoken of accidents that have led to great discoveries, and we firmly believe that the Pyle Leghorn is a "discovery" that owes much to accident. It must not be thought that we in any way wish to disparage the skill which was shown in putting before the public in 1886 a new variety which could, from an exhibitor's point of view, justly claim to be described, both in color shape—viz., Pyle Leghorn. Nevertheless, knowing how quickly the introduction of a White Leghorn cock amongst a pen of hens of Black-red type, or even of a reddish-buff type, will result in progeny passably "Pyle" in color of plumage, it requires no very great stretch of imagination to think that the "tip" was originally given by an accidental straying of either a "White" cock into a "Brown" pen, or vice versa. Be this as it may. Mr. G. Payne can certainly claim to have followed his idea, whatever its inception, to a definite and valuable conclusion, and the Pyle Leghorn now stands as one of the best of the newer varieties.

The full history of its manufacture is stated to be as follows: In 1882 Mr. Payne mated a Brown Leghorn hen, which had two white feathers in each wing, with a White Leghorn cock. Twelve eggs only from this mating were set, and of the ten chicks hatched, six died; of the remaining four, three were pullets slightly tinged on breast, but otherwise fairly white. In the following year a good Standard Brown cock was penned with the three pullets, and fifty chicks bred from them. Unfortunately, it was found that there was too much color, and in the wrong places. Most of the pullets were sandy-buff in color, with ashen-grey tails, while the cockerels had a few orange-colored feathers on back, wings and thighs.

In 1884 the largest and darkest of the 1883 pullets were mated with a White cock, in order, as Mr. Payne states, to banish body color. The result was not very encouraging, for out of seventy chicks no cockerels of any merit were discovered; there being only seven pullets, moreover, clear on back and tail. These latter, however, were not dark enough in breast.

In 1885 a Brown cock was mated with six 1884 pullets and ten 1883 hens of the lightest shade. Of the one hundred and fifty chicks hatched, one cockerel alone was saved, and he a very poor specimen; while of the pullets, two, as well as the cockerel, were shown at the Leghorn, Plymouth Rock and Andalusian Club Show, held at Albert Palace, January, 1886. The cockerel scored nothing, but the pullets were awarded second and third, the first prize going to a Cuckoo.

In 1886 the Pyle cockerel was mated with three Pyle bred Brown pullets of a bluish slate color, two others of the Pyle color (but too much of it), and two winning Albert Palace pullets. From this mating there resulted a fairly large percentage of well-marked birds.

In 1887 the chicks were principally bred from the 1886 cock (winner of first Dairy) and another winning cock and ten hens.

The above is a somewhat condensed form of Mr. Payne's description of his labors down to 1887, since which time the breed has been fostered by many others, with the result that now "like begets like."

It will be seen that Leghorns, and Leghorns only, were used in the manufacturing process; but the length of leg and general hardness of feathers seen in some of the recent winning pullets suggests a cross of Pyle Game, and we have distinct recollections of profusely-feathered legs on a cockerel exhibited at the Palace Show of 1894. It will be instructive now to closely compare our color theories with the progress and result of the matings recorded above from 1882 to 1887, in order to see in what way the record of experience justifies our conclusions, and how far our conclusions may appear antagonistic to the statements of "the originator."

The "mother of the race," it appears, had white feathers in each wing. This, as we have seen, at once proclaims lack of pigment; in other words, a pronounced tendency to "albinism." A White cock is mated with her, thus intensifying the tendency. Result—chicks almost white; red pigment reduced, but not destroyed, on breast. The following year sees an infusion of red and black pigment by using a Brown cock with these "light Pyle" pullets. Result should be—cockerels with reddish hackles, back and wings; splashed breast, underparts, and tail. Pullets, very patchy and ruddy everywhere except tails, which should be a dirty ashen grey.

The following year fairly good cockerels and pullets should be easily bred by (as was done) the use of a White cock. The originator, it will be noted, says the White cock was used to banish body color, a process which we have shown to be inevitable if a good "albino" is utilized. But here we are somewhat checked, for it appears that no good cockerels were bred, and the pullets were again too light in breast. It may be that the undercolor of the Brown cock used in 1883 was not as dense as it might have been; but we cannot but think that, with care in selection, the time in which Pyles were produced might have been considerably reduced.

The successive stages, however, all conform to our theories; and it may be instanced how pertinacious the red pigment in the hackles, both of cocks and hens, is, even though the black pigment is, with the exception of a few ticks in tail, almost entirely destroyed. Examine the neck hackle of both sexes, and observe that the black stripe in the hackles of Browns has given place to white; while the fringing of light golden yellow and of orange red in the hackles respectively of Pyle hens and cocks is always found though varying in tint. Observe further, that where the rusty red feathers appear on the wings of Brown hens, in a similar position will they be found on many Pyle hens, causing the birds to be described as "rosy-winged."

Needless to say, the amalgamation of two different strains, viz., Whites and Browns, made their progeny very hardy and strong. Pyle Leghorns, however, do not mature quite so early as the other varieties. They are surprisingly docile, are excellent layers, and make fairly good table birds.

Origin of Dominique Leghorns

Dominique, or Cuckoo Leghorns, started in on the Leghorn wave of popularity, being recognized as a Standard variety as early as 1874. But they never became popular and eventually, in 1898, were dropped from the American Standard of Perfection, and are rarely seen at American shows today. In England they are still recognized and bred as Cuckoo Leghorns. Those that we saw years ago were coarser in comb, smaller in body, and less graceful in shape, than the other varieties, the plumage also being anything but attractive—the dark gray and white barring being very irregular, and white feathers on tail and wings being serious defects. That they might have been developed into a nicely barred Leghorn, there can be no doubt of, but breeders somehow had eyes for just one barred plumaged breed; namely, the Barred Plymouth Rock; so other breeds of similar color of plumage fell by the wayside, including the once very popular and useful American Dominique.

The origin of the Dominique or Cuckoo Leghorn is shrouded in mystery. Mr. Ayres referred to them as the progenitors of the Black Leghorns—not at all improbable or impossible—but how, where and when these Quaker garbed Mediterranean fowls came, no reliable data is available.

Harry Hesford, in his book, "Leghorns of All Varieties," London, England, 1896, devotes a chapter to Cuckoo Leghorns, from which we extract the following remarks bearing upon their early history.

Having treated of the White and Brown varieties of the Leghorn family, there now remains for consideration those sections which are usually grouped together as minor varieties.

Keeping strictly to the chronological order, apart from considerations of importance or popularity, Cuckoo Leghorns will first come under review. Black Leghorns, however, are generally considered to have appeared in England contemporaneously with "Cuckoos," and it may be taken that most probably they were imported from the Continent at the same time. Both varieties, it may be well to state, had been known in Denmark for a long period before their first appearance in England, and we find at the Copenhagen Show, held on July 3rd, 1885, amongst the 124 Leghorns penned, nine pens of "Black" and two of "Cuckoos." Be that as it may, the first recorded instance of the appearance of "Cuckoos" in the show pen in England we have been able to trace, was at the first club show of the Leghorn, Plymouth Rock and Andalusian Club. At this show held at Cheltenham in January, 1885, a Miss Fowler showed three pens of Cuckoos in the "Any Other Variety" (other than Browns and Whites) class, winning second and third prizes. Since that time Cuckoo Leghorns have been occasionally seen in the show pen, but they are not, and never have been, extensively cultivated.

The Cuckoo Leghorn of England, to judge by the above records, is not destined to become popular, and is more likely to join the Dominique Leghorn and enter in the "breeds that failed to make good" class.

Spangled Leghorns

Donald Watson mentions such a variety of Leghorns in "The Poultry World," December, 1874, giving the following information regarding them:

Spangled Leghorns were, so far as I know, first bred in this country in 1872, from Italian stock imported in 1871, and from this start have attracted great attention, many pronouncing them superior in beauty to any other of the Leghorn tribe, and all who have bred them extolling their vigor, early maturity, and wonderful laying qualities.

The plumage is pure brilliant black and white, each feather (excepting primaries and secondaries, which are entirely black) being white tipped instead of the reverse, as in Silver-spangled Hamburgs. The ear lobe is white, comb perfectly erect and five lobed in cock, lopping finely in hen; beck, skin, and leg, bright yellow. The birds seem to breed very true, one breeder claiming (and, I think, with justice), that 4-5 will come true to feather. Certain fanciers, perceiving the future importance of this breed, have attempted to produce an imitation by crossing Black and White Leghorns. We can say that, in every case that has come to our knowledge, the experiment has been a total failure. Nearly all the offspring of the first cross have been almost or entirely white, often with dark legs and bills—a measly mixture. When black and white feathers have appeared, they have usually been black-tipped, thus showing that the true spangled bird is not the result of a cross.

In England this variety was formerly called "Mottled Leghorns," but is now recognized there by the name of Anconas. The latter are becoming very popular in this country, but are not recognized as a Leghorn variety, but as a distinct breed belonging to the Mediterranean class.

Birchen Leghorns

None of this variety has been exhibited in America, that we are aware of, and few have been seen in England, to judge by the following remarks of Mr. Hesford in his Leghorn book:

We have also personally seen Birchen Leghorns, but we doubt whether half a score of representatives of this variety exist, or have existed at one time, although we have seen for some years an advertisement offering birds and eggs of the breed for sale.

This was written in 1896, but since then very little has been written on Birchens; neither do we find them advertised in recent English poultry journals. The origin of Birchen Leghorns is not given, but that they were selected from Silver Duckwing Leghorn-Brown-Red Game crosses seems probable. Birchen Leghorn males have the Duckwing hackle, saddle and wing marking, differing only in the color of the breast, the feathers of the latter, instead of being black, as in the Duckwing, are black laced with white, in the Birchen. In the females the neck is silvery white, the hackle feathers being striped with black; back, tail, wings, body and thighs are black, but breast feathers are black laced with white. This variety is a handsome one, and once it is firmly established in its color markings, should not be difficult to breed.

Blue Leghorns

"Bred and made in England" applies to the blue variety of Leghorn. Crossing White and Black Leghorns was probably the easiest means applied to obtain these blue birds. They are like Andalusians in color markings, differing only in the color of the shanks, which are yellow instead of slate or black, and, like Andalusians, they do not reproduce the color in their progeny in over sixty per cent. of the latter, although some English breeders claim that their strains produce 80 per cent. Standard colored chickens. From a fancier's standpoint, Blue Leghorns should prove very attractive.

Golden Duckwing Leghorns

This variety differs only in the color of hackle, back, saddle and wing bow of the male, from the Silver variety, the females of both varieties being alike in color markings, with the exception, rarely noticed, of the Silver Duckwing females, having a very slight lacing of light silvery gray on the feathers of the body. Golden Duckwing Leghorns are the result of crossing a Brown Leghorn male with a Silver Duckwing female. The color sections of the males are: Neck, creamy-white, fading to ivory white at bar of hackle; outside feathers finely and clearly striped with black, the stripe broadest at the base of the hackle; back, bright gold, dark at shoulders, shading to light straw at beginning of saddle hangers, latter being very light straw color shading to ivory white, lightly striped with black. Wing bow, light, bright gold, not red or dark orange, but yellow or light orange, solid and even, any mixture of lighter or darker feathers being objectionable. Wing bar, blue black; wing bay, white. Breast, tail and underparts, black.

Rose Comb Black Leghorns

A comparatively new variety which originated in England, and in which country it is evidently quite popular in some quarters. Being the result of Hamburg-Black Leghorn cross, Rose Comb Black Leghorns resemble Black Hamburgs too closely, to ever become popular with fanciers. As a utility fowl it may prove a desirable addition to the white egg laying races of poultry.

CHAPTER II

Evolution of Leghorn Type

Studies of Shape Characteristics of Leghorns at Different Periods of Their Development. Illustrations of Standard Type From 1874 to 1905. Important Changes in Carriage of Tail and Length of Back.

F. L. Sewell

LENGTH of neck and limbs, size and character of comb, and carriage and spread of tail have been among the main points of controversy and change of fashion, and it is interesting indeed to study in the portraits of prize winners, among modern Leghorns, how the type has progressed.

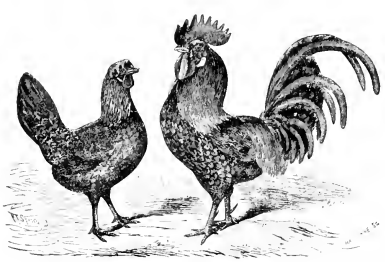
A study of the type of the Watson (No. 8) pair of Brown Leghorns is sufficient to impel acceptance of the statement that the early Brown Leghorns averaged about one-half pound heavier than the white variety. This pair certainly impress us as heavier than the following plate of White Leghorns.

There is just a touch in the conformation of the type illustrated in this pair that suggests Spanish—the length of keel bone, the nearly parallel lines of the back and the long breast, besides the form of tail proper, the lower feathers being so much shorter than those at the top.

Comparing this picture with the following reproduction of the pair illustrating "Eureka" and "Snowflake," published in 1873, by J. Boardman Smith, of North Haven, Conn., we at once recognize the well rounded breast and spread of tail so much valued and admired in Leghorns of today. The male especially, in this pair, exhibits the lower feathers of tail proper nearly or quite three-fourths the length of the upper pair. The saddle is also profusely furnished in true Leghorn style as fancied nowadays.

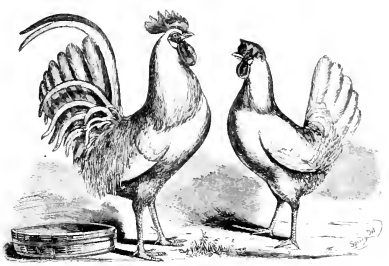
These early wood engravings of the breed show the characteristic sprightliness of the race with their proud high-headed carriage. The alert pose of head in the cock of the J. Boardman Smith plate is full of Leghorn expression to one acquainted with the spirit of these birds.

In the Watson pair of Brown Leghorns an important difference from the white plate (9) that follows is the rather level body in the Browns as compared to the more upright carriage of the Whites. This over erect, or slanting body, is a feature in the carriage of the breed which fanciers particular about symmetry have carefully selected to modify by mating together those more level in carriage of body. The appearance of this has been approached by birds possessing considerable length of saddle, with plumage furnishings that extend the lines of the back in a graceful sweep onto the tail coverts.



8—Brown Leghorns from stock of Mr. Reed Watson, 1873, who produced Brown and Black Leghorns.

The Leghorn in America has always been greatly admired for its gracefully turned curves of outline, and any approach to an angular coarseness has been discouraged by the majority of exhibiting fanciers. This ideal of curves has applied equally to the rounded breast, the nicely turned form of the shoulders and thighs, and the profuse flow of plumage over the entire bird that helps so much to blend all sections together.



9—White Leghorns of J. Boardman Smith, prominent among White Leghorn breeders in the '70s.

The sharp angle caused by the over erect tail at its juncture with the saddle, has, since our first acquaintance with the breed in the 70's been a matter for toleration. In the first "American Standard of Excellence" of 1874, no mention of squirrel tail is made in the disqualifications for Leghorns. In this standard the description of the carriage of tail for the male of the brown variety is "upright" and for the white is "very upright."

Plate No. 10 illustrates the Leghorn type as a well known judge recognized the style of White Leghorns in 1874. At that time Mr. Purce was a fancier and breeder of this variety of the breed, and it no doubt well illustrates some of the best obtainable at that date.

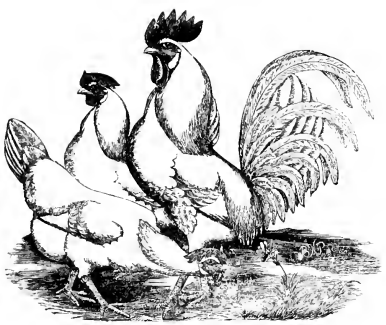
Not until the 1898 edition of the Standard, where "General Disqualifications" are referred to for Leghorns, is "squirrel tail" made a definite disqualification for the ill-bred Leghorn that carries his tail "in squirrel fashion."

It has been asserted that height in the carriage of tail is an indication of vigor. If this were true, then the Japanese Bantam should class first in point of vigor, and the Aseel among the inferior. However, these prove wrong examples to establish such a rule; in fact, appear to dis-

prove such a conclusion. Langshans carry the tail at a high angle, Sumatra Games carry theirs quite low, and both class high in the scale as egg producers and breeds of exceptional vigor.

Leghorn experts in convention with the revision committee of the American Poultry Association in 1893, decided upon forty-five degrees as the most desirable elevation for carriage of tail of Leghorn males, and forty degrees for carriage of the tail of the female.

The Leghorn race first reached America from Italy, and was from here taken to England. Mr. Lewis Wright, for many years the great English authority on poultry, appears to accept the Leghorn as a branch of the Spanish family, and many fanciers of England have made their selections as considering it of that class. The late controversy on the Leghorn type appearing in British poultry journals, plainly emphasizes that many breeders there still desire to breed it as a Spanish variety. Mr. Ludlow, who has always stood first in portraying the British ideals in poultry, plainly shows what the White Leghorn

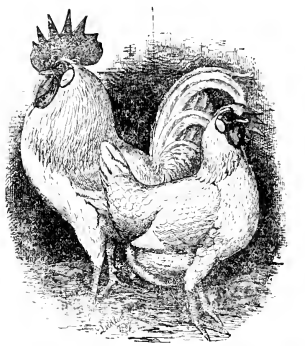


10—White Leghorns sketched by B. N. Pierce in 1874.

was in England in 1876-7. At the time when we first became acquainted with the strains of Leghorns in the East in the early 90's, there were exhibited three fashions in Leghorns.

The sketch of the first prize cock at New York, in 1890, (Plate 12) was made at the first show in the new Madison Square Garden. This bird was winner of special for most typical Leghorn male in the show and represents the finest show type in males previous to the selection for the fashion of low tails and longer saddles. This fully matured cock showed nicely rounded body lines, well balanced on fine boned limbs of length proportioned to the body and other sections. Head fine, comb, wattles and ear-lobes close to the description of our present Standard. The body is rather toward the level now desired, and the saddle plumage is long and profuse. The tail is not so high as in those illustrated in the early 70's, although a good deal higher than the forty-five degrees demanded by the present Standard. This cock was one of good size, elegant style, show temperament, and such a bird as was almost sure of winning anywhere at that time.

Another family were those bred and shown by Ezra Cornell and Willard Knapp, afterward owned alone by Ezra Cornell, and finally, (after the death of Ezra Cornell) sold to Mr. E. G. Wyckoff, of Ithaca, N. Y. This strain produced quite a number of the style which later, during the 90's, made a number of good winnings and gained quite a degree of popularity. They had clear, white plumage, nice heads, and were peculiar in being of unusual length of limb. This latter feature distinguished a num-



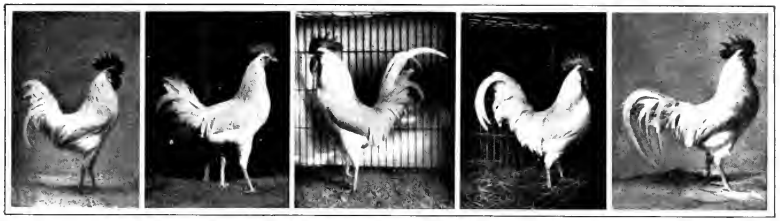
11—Winning White Leghorns of England by J. W. Ludlow in 1886-7.

ber of show birds of this strain that won at Madison Square Garden and other shows.

One of the most common failings with fowls selected to a type with long legs appears always to be that the back slopes and the breast fails in depth. In the practical

12—Winner of first and special for most typical Leghorn male at Madison Square Garden in 1890. Owned by Knapp Bros., of Fabius, N. Y.

poultry yards where Leghorns have been kept in large numbers for production of eggs, many assert that the medium sized birds on legs of moderate proportions, prove the most productive and profitable. However, there have been others who desire those of a somewhat larger type, so that in exhibitions there are apt to be differing



13 14 15 16 17

REPRESENTATIVE TYPES OF WHITE LEGHORNS.

Reading from left to right: 13—Ezra Cornell's first prize winning White cock, New York, 1901. 14—First cockerel Pan-American Exposition, 1901. Purchased by White Leghorn Poultry Yards, of Waterville, N. Y. 15—First cock Pan-American Exposition, 1901. Purchased by E. C. Wyckoff, Ithaca, N. Y. 16—A first Boston (1902) cockerel, shown by Charles J. Fogg, Waltham, Mass. 17—A first prize Chicago cock, shown by White Leghorn Poultry Yards, 1905.

opinions between breeders and that judges will not always agree in their decisions. The truest Leghorn symmetry as it is accepted among American fanciers, has not been secured where size or length of limbs were prime factors for picking the winners.

No. 13 was a first cock at Madison Square Garden exhibited by Ezra Cornell in 1901. This bird and the cockerel and cock (No. 14 and No. 15) which follow in the same group, are good representatives of this type, which appeared somewhat stilted. These birds were larger and somewhat heavier than the majority of Leghorns in America excepting the strain shown by F. W. Whiting about that time.

Mr. Whiting's White Leghorns won many first honors in New York and Boston shows and were much commented upon. They were of unusual size, larger than any other strains of Leghorns in America with combs and a number of points a trifle coarser than specimens that could not approach them in size. Their appearance had a wholesome influence upon the Leghorns as a breed, setting the example which made small Leghorns unpopular.

On examination of these three plates one at once perceives that these birds were closely feathered, giving them the well tucked up appearance underneath, which, in the minds of many fanciers, is desirable. This quality does present a smartness when the limbs of the fowl are very well formed and when not overdone, and helps the showy style of the Leghorn. This closeness of plumage, however, throughout the entire figure of the specimen, often fails to present the gracefully curved lines that a little fuller undercoat and a greater wealth of outer plumage would effect. Angular lines on the Leghorn have never kept long in vogue among American fanciers; it is the Leghorn of graceful curves that lives on as the ideal of our leading breeders of this race of fowls.

The present practice of selecting for as large size as obtainable, among Leghorns that possess known purity of blood, and, as near as possible, ideal form and carriage, proves the safest course. There seems to be a limit in this procedure, and the breeders of America have learned that progress in size of the Leghorn cannot be attained too rapidly. Yet we believe that the majority of our breeders in this country are quite willing to improve size in the breed, just as long as the true Leghorn ideal is reproduced, but this, in fact, means very cautious, accurate breeding, and slow improvement, which is the only safe system with such a fine, pure old race.

In cockerel No. 16 we have a model that shows considerable above the average size. This cockerel was produced when both the full-boned type, bred by Knapp Bros., also by D. W. Young and others, as well as when the F. W. Whiting birds were making things interesting in the eastern show rooms. This cockerel was shown by Mr. Chas. J. Fogg, of Waltham, Mass., winning first at Boston in 1902.

This cockerel in appearance was a type, which, blending the D. W. Young strain with the F. W. Whiting stock, might have produced, and is a very useful style.

Another type, No. 17, makes quite a variation from the Ezra Cornell models. The long tail with extended ribbon-like sickles reminds one of the Duckwing Leghorns that contain quite a strong cross of the Phoenix, or Long-tailed Japanese race of Games. It is surprising to find that although this bird has very unusually long sickles and hangers, that its saddle hackles do not extend even to a length equaling the preceding cockerel; in this case being an exception to the rule, as most Leghorns having extra well-finished tail plumage, have also the long saddle hackles.

Standard Shape of Leghorns

Shape Outlines for Leghorns, Male and Female, Submitted to Prominent Breeders for Criticism and Approval—National Single Comb White Leghorn Club Ideal Sketches of Male and Female—Illustrations, Like Those in the Standard of Perfection, Also Meet with Criticism

J. H. Drevenstedt

THE standard shape of Leghorns as illustrated in the American Standard of Perfection, has been criticised adversely by members of Leghorn Specialty Clubs, the National Single Comb White Leghorn Club going so far as to repudiate the Standard illustrations by non-members, clearly points out the difficulties that confront framers of the Standard and delineators of standard-bred poultry in preparing the text and the illustrations. Notwithstanding the fact that the text was satisfactory to Leghorn breeders, and the illustrations were accepted as correct at the St. Louis meeting of the American Poultry Association, White Leghorn breeders of the east, immediately after the 1910 Standard appeared, kicked over the traces, and started to create ideals of their own. That these Club ideals do not strictly conform to the word description in the Standard will be manifest to all Leghorn breeders who carefully study the shape sections of these illustrations.

Ideal Male Leghorn Type.

The above illustration is reproduced from the National Single Comb White Leghorn Club catalogue of 1911, by courtesy of F. O. Groesbeck, Secretary. This sketch is submitted by the Club as the highest possible conceivable type of the Leghorn male. This drawing was especially designed by Frankiane L. Sewell for the Club, the members of the latter claiming that the ideal as adopted by the revision committee of the American Standard of Perfection, differs from the ideal of Leghorn breeders in general.

That the Standard shape of the male and female Leghorn does not meet the requirements in all sections as printed in the word description of the American Standard of Perfection is also true. In order to arrive at a better understanding among Leghorn breeders as to what the ideal male and female should be in shape, Artist A. O. Schilling was instructed to make the standard shape outlines for male and female illustrated in the plate shown on page 28.

These outline sketches were printed in the American Poultry World and Reliable Poultry Journal in May and June, 1911; copies were also sent to prominent Leghorn breeders for criticism and approval.

The following breeders and judges sent in replies:—

Wm. H. Heil, Easton, Pa., Buff Leghorns.

Geo. L. Hornbrook, Decatur, Ill., S. C. Brown Leghorns.

O. T. Hallman, Charlotte, N. C., S. C. White Leghorns.

Geo. B. Ferris, Grand Rapids, Mich., S. C. White Leghorns.

Elmer V. Shultz, Webster Groves, Mo., S. C. Brown Leghorns.

Lewis T. McLean, Shushan, N. Y., White Leghorns.

N. V. Fogg, Mt. Sterling, Ky., S. C. White Leghorns.

Harmon Bradshaw, Lebanon, Ind., S. C. White Leghorns.

Fred H. Cook, Beaver, Pa., S. C. Brown Leghorns.

L. E. Merihew, Marathon, N. Y., S. C. Buff Leghorns.

P. R. Pfouts, Bucyrus, Ohio, S. C. White Leghorns.

G. J. Gerber, Dalton, Ohio, S. C. White Leghorns.

J. N. Coffman, Edinburg, Va., S. C. Buff Leghorns.

Edward W. Phelps, Guilford, Conn., R. C. Brown Leghorns.

O. S. Gehrman, Omaha, Nebr., S. C. Brown Leghorns.

J. H. Henderson, Knoxville, Tenn., S. C. Brown Leghorns.

instructing Mr. Sewell to make new sketches which purport to be the ideal shape of the male and female Leghorn as favored by the National Single Comb White Leghorn Club.

These Club sketches are reprinted on this and the opposite page, by courtesy of F. O. Groesbeck, Secretary of the National Single Comb White Leghorn Club, who kindly furnished the original half-tone plates for use in this book.

The fact that these Club sketches are also meeting with adverse criticisms by Leghorn breeders, who are

A. J. Murphy, Sewickley, Pa., S. C. White Leghorns.

Leon C. Huntington, Omaha, Nebr., S. C. White Leghorns.

A. T. Lindgren, Kingsburg, Cal.

F. R. Merk, Rocky Ford, Colo., S. C. White Leghorns.

Yesterlaid Egg Farms Company, R. C. Lawry, Mgr., Pacific, Mo., S. C. White Leghorns.

R. A. Alexander, Wheeling, W. Va., S. C. Brown Leghorns.

F. D. Rogers, Elgin, Ill., White Leghorns.

Dr. F. M. Reed, Wyanet, Ill., R. C. Brown Leghorns.

W. R. Curtiss & Co., Ransomville, N. Y., S. C. White Leghorns.

W. A. Bode, Fairhaven, Pa., S. C. White Leghorns.

F. C. Gutknecht, Cedar Falls, Ia., S. C. Brown Leghorns.

G. Schimke, So. Hadley Falls., Mass., S. C. Brown Leghorns.

W. W. Kulp, Pottstown, Pa., R. C. Brown Leghorns.

E. A. Vosburgh, East Canaan, Conn., S. C. Buff Leghorns.

E. E. Endsley, Uniontown, Pa., S. C. Brown Leghorns.

Jos. Reiff, Fayetteville, Pa., R. and S. C. White Leghorns.

J. Leroy Cunningham, Indiana, Pa., S. C. White Leghorns.

Clarence Hewes, Indianapolis, Ind.

C. W. Sixt, Westpark, Ohio, S. C. White Leghorns.

Geo. O. Brown, Baltimore, Md., poultry judge.

C. H. Rhodes, Topeka, Kan., poultry judge.

I. K. Felch, So. Natick, Mass., poultry judge.

D. T. Heimlich, Jacksonville, Ill., poultry judge.

W. R. Graham, Guelph, Canada, poultry judge.

E. C. Branch, Lee Summit, Mo., poultry judge.

F. J. Marshall, College Park, Ga., poultry judge.

U. J. Shanklin, Anamosa, Iowa, poultry judge.

J. C. Johnson, Petersburg, Ill., poultry judge.

B. J. Hill, Akron, Ohio, poultry judge.

Jos. Dagle, Richland, Ia., poultry judge.

W. H. Card, Manchester, Conn., poultry judge.

Theo. Faulstich, Dayton, O., poultry judge.

H. B. Savage, Belton, Tex., poultry judge.

C. H. Ward, Bethel, Conn., poultry judge.

J. C. Punderford, Freneau, N. J., S. C. White and Buff Leghorns.

Geo. S. Barnes, Marshall, Mich., Buff Leghorns.

B. E. Craig, Davis City, Ia., S. C. Buff Leghorns.

Paul Scott, Mitchell, S. D., S. C. Brown Leghorns.

A. C. Smith, Waltham, Mass., S. C. Brown Leghorns.

Ezra C. Carter, Marathon, N. Y., S. C. White Leghorns.

Paul C. Bork, Akron, Ohio, S. C. White Leghorns.

Earl E. Wells, Cohoes, N. Y.

Wm. F. Brace, Victor, N. Y., S. C. Brown Leghorns.

E. C. Gilbert, Tully, N. Y., S. C. Buff Leghorns.

O. M. Robbins, Santa Ana, Calif.

Criticisms and Approval by Leghorn Breeders.

I think the male bird is just about perfect but do not like the hen, as I think she is too low and heavy in body, making her look ducky. I think the Buff Leghorn female in the new Standard is hard to beat. In my opinion she is far superior to this one.—Wm. H. Heil.

I think the tail on female as shown in sketch is a "freak," as it is anything but an ideal Leghorn shape, being not only too short and broad, but also very coarse

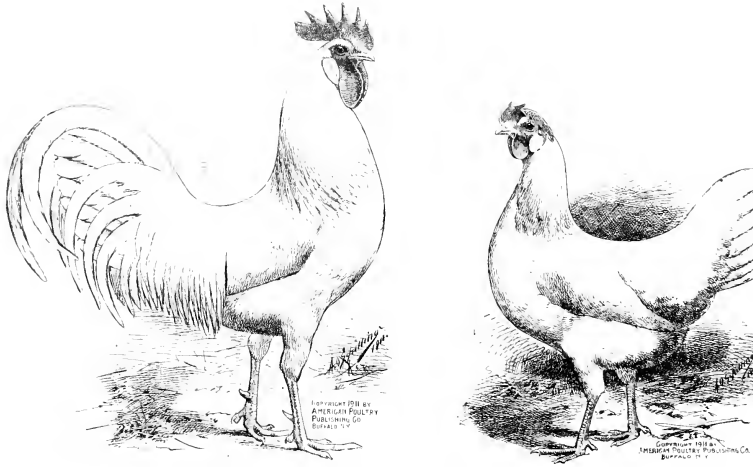
Ideal Female Leghorn Type.

The above illustration is reproduced from the National Single Comb White Leghorn Club catalogue of 1911, by courtesy of F. O. Groesbeck, Secretary. This sketch is submitted by the Club as the highest possible conceivable type of the Leghorn female. This drawing was especially designed by Frankline L. Sewell for the Club, the members of the latter claiming that the ideal as adopted by the revision committee of the American Standard of Perfection differs from the ideal of Leghorn breeders in general.

looking. Another fault is in the back, which is too long, almost a Minorca type.

The male is good except that personally I would prefer the old Standard lines at base of tail. Too much curve where tail joins back.—Geo. L. Hornbrook.

I will say frankly that these sketches in my opinion show the ideal Leghorn in both male and female—in fact I have never before had the pleasure of seeing what I consider more perfect sketches and I sincerely hope they will be adopted by the American Poultry Association in another edition of the Standard of Perfection.—O. T. Hallman.



Standard Shape Outlines Suggested For Leghorns, Male and Female.

The outlines of the Leghorns here submitted for criticism were made from photographic models of winners at last season's exhibition, drawn to conform to the Standard word description for shape in each section. These drawings represent matured specimens, 1, e., cock and hen. They show the tail of the male carried at an angle of 45 degrees and that of the female at 40 degrees as called for by the Standard of Perfection. Both the male and female show the upright carriage, the sprightly alertness and style characteristic of the Leghorn breed. The comb of the male is smooth, medium in size, setting straight and firmly on the skull, the serrations being deep with points that are even and well balanced from front to rear, the blade extending well beyond the back of the head with no tendency to follow the neck. The comb of the 1910 Standard Leghorn male is too large and deep, the serrations and points being less uniform in size than in the sketch outlined above. The male outline herewith also shows a longer and more uniform breast line, more length of thighs and shanks and a more fully furnished tail than the Standard male. The female outlined above is a Leghorn from head to foot, every line denoting grace and truly indicating the wonderful activity that has made her world-famous as the "business hen of America." The long, beautifully arched neck, moderately long back with graceful sweep of the tail; the length and spread of tail; the prominent breast; the moderately long body and legs; the slender shanks and toes; the smooth and perfectly serrated comb carried in the most characteristic manner—all of which are called for by the Standard, can be found in the above picture. The 1910 Standard female lacks in length of body and neck; her comb at the beak is a trifle heavy; the serration between first and second points is too wide, and thighs and legs are thicker than called for by the Standard description.—Editor.

Sketch of Leghorn male you have submitted has comb and wattles far superior to the Standard illustrations, but in other respects it is not satisfactory. If comb and wattles were altered to conform to this sketch you have sent me the present Standard illustration of S. C. White Leghorn would be beyond criticism.

Your sketch of Leghorn female is superior to the Standard cut in nearly every section and should replace the present illustration without being changed in any particular. It is ideal.—Geo. B. Ferris.

In my opinion the male should be longer in body, tail lower, just a little, wattles should be a trifle shorter and round, and the shanks should not be so straight. As to the female, there is little change that I would recommend. Her tail also should be lowered a little and fullness in breast should be raised somewhat.—Elmer V. Shultz.

In reply would say that although these suggested outlines are not strictly ideal, in my opinion, still they greatly improve those in the 1910 Standard as to the proper type, showing the true breed characteristics of the Leghorns.

To my judgment I think the hen is somewhat full in breast, having tendency to have her look just a little too long and blocky. The backle of the male does not seem as abundant as it should be, nor to flow well over her shoulders. These are very small defects as compared with the illustrations of White Leghorns in the present Standard.—Lewis T. McLean.

The type of hen shown in this outline, in my opinion, is not only the most beautiful type for exhibition, but also is one that will make good her title "the business hen of America." She has just the right size comb for the most attractive exhibition bird and also for the heaviest layer. I like the long body and sprightly appearance of this Leghorn female.

The male taken as a whole I consider very good and if there are any changes I would suggest it would be that the earlobes are a little too long, as compared with the width and that the legs are a little too far toward the front of the body.

I consider these shape outlines of both male and female to be so much better than those given in the 1910 Standard that I have a very little criticism to offer.—N. V. Fogg.

These are beautiful cuts of the best fowl known—to me! The only criticism to offer on the male is that his wattles are longer than I like. Only criticism on female is that her tail is just a little too short to suit me.—Harmon Bradshaw.

I have examined same carefully and cannot see where I could improve them. Will say, that if I were able to breed Leghorns up to these outlines they would be perfectly satisfactory to me.—Fred H. Cook.

In regard to the Leghorn outline sketches submitted for inspection I think they are not far from the proper ideal of the Leghorn. The type as I see it is about that which all judges and breeders favor when picking show birds.

We have some specimens showing a tail nearly as wide, and these birds as a rule (especially those with real low tails and also wide tails) are not quite long enough in thigh and shank and for me I consider the last two points more important for business and beauty than the extremely low tail extremely spread.

I hardly think any point would be considered more important than a low, long, well spread tail, especially with the best judges, who realize most fully what it means to produce such. The tail is certainly a show quality, but I would suggest that the tail of the female on the enclosed proof be folded or closed up enough to give it a longer appearance. I also think the base of tail on this

hen is too wide or deep. I will not criticise the breast, but breast looks like the limit and the future Leghorn may have them as full and to their advantage.—L. E. Merihew.

I must say that both sketches are the nearest my ideal I have ever seen and are a vast improvement on the illustrations in the 1910 Standard of Perfection. I am greatly pleased at the interest you are taking in this matter, as I honestly think illustration of the S. C. White Leghorn male is misleading as a guide in selecting the winners at our shows for the next four years.

In the first place the comb of the S. C. White Leghorn male in the 1910 Standard (which is 1-10 of the bird in number of points) was very much a disappointment because the average judge would say "it is large enough for a Minorca," also the points are unevenly serrated.

The neater outlines of the neck of both male and female as shown in your sketches are an improvement, in showing the active and nervous temperament as well as the correct symmetry or type that makes the breed.

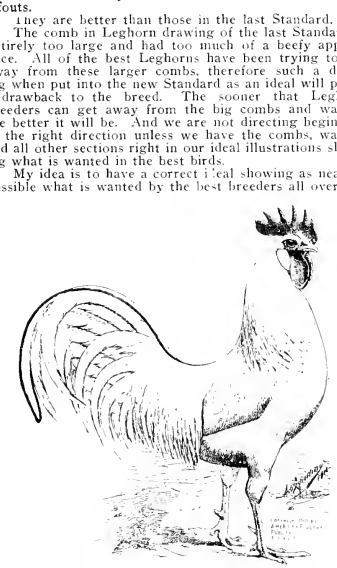
The neat head points will also meet the approval of leading breeders and as a whole the sketches in my estimation are "the missing link" and should be accepted to replace the ones shown in our misfit Standard.

If one doubts the misfit of this Standard he has only to turn from the S. C. Brown or S. C. Buff male which are both much better than that of the S. C. White male—and ask himself why there is so much difference.—P. R. Pfouts.

They are better than those in the last Standard.

The comb in Leghorn drawing of the last Standard is entirely too large and had too much of a beefy appearance. All of the best Leghorns have been trying to get away from these larger combs, therefore such a drawing when put into the new Standard as an ideal will prove a drawback to the breed. The sooner that Leghorn breeders can get away from the big combs and wattles the better it will be. And we are not directing beginners in the right direction unless we have the combs, wattles and all other sections right in our ideal illustrations showing what is wanted in the best birds.

My idea is to have a correct ideal showing as near as possible what is wanted by the best breeders all over the



J. H. Henderson of Tennessee suggests a slightly longer back and a trifle lower carriage of tail.

United States, then see to it that the judges stick to these ideals in placing awards.

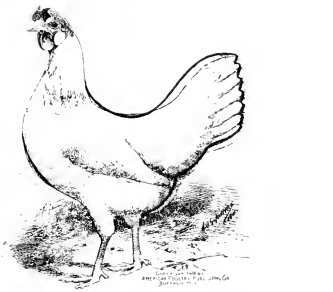
The serrations in the new outline you sent me might be a little closer together, so as to show the blade a trifle better.

All other points being equal, under most of the best judges today, a bird with a little lower and still better spread tail would win out every time.—G. J. Gerber.

In my opinion they are the best sketches yet produced, and represent my interpretation of the Standard perfectly.

I think most Leghorn breeders are putting on too much comb, both on male and female. That is one objection to the 1910 sketches—too much comb. A comb as is usually found on Leghorns bred after these sketches, must be thick and more or less coarse in order to stand erect. The curve of the back and tail is very pleasing.

By all means let us have a Standard with a proper type and characteristics of Leghorns, so that we may know Leghorns from Minorcas.—J. N. Coffman.



The heavy black lines in the sketches indicate the changes that J. H. Henderson of Tennessee suggests. They show less fullness in breast, less length and depth of body and the tail carried at a higher angle.

The sketches of Leghorns received and I certainly think the artist has done the breed justice in every respect. How these sketches can be improved upon and retain the true characteristics of this noble breed is beyond me. I should say they are the ideal type of both male and female and should the A. P. A. approve these cuts and adopt them for the Standard, I think they would be accepted with pleasure by all Leghorn breeders throughout the country.—Edw. W. Phelps.

In my opinion these outlines are very satisfactory.—O. C. Gehrman.

I regard the sketch of male as being much better than that of the female. Have suggested one change in male outline that I hope may be of some service to you.

As a Leghorn breeder I appreciate the work you are doing and believe you are taking a step in the right direction.—J. H. Henderson.

I am in receipt of the plates of the White Leghorns, and after examining them closely I wish to say that I think they represent this breed more thoroughly than the cuts in the new edition of the 1910 Standard, but if Mr. Sewell is going to make new drawings I would like very much to see them and make a comparison.—A. J. Murphy.

With the exception of the tail of the female the sketches submitted by you represent, in my estimation, the ideal Leghorn shape.

I believe that the shape of the back and tail of the female as shown by drawing used in Standard is entirely too beefy to suit my ideal, and also I think both the present Standard male and female are a bit too short in the legs for typical Leghorns.—Leon C. Huntington.

A very important point in the pictures in our Standard has been overlooked, viz.: to have the outlines of male and female of such proportions that birds of the same type can be bred from the same mating.

In the sketches submitted by you the male is too slender and the female the reverse. I have tried to make the sketches right in this respect by making the female more slender and the male a little more blocky.

The main tail feathers in Leghorns should number eight instead of seven and a very important thing for the male is abundant tail feathering, especially the side hangers.

I have noted on the sketch the changes I deem necessary. Would especially call attention to the eyes; they are too large and the lobe in female sketch is entirely too large. Beak on each sketch is too blunt. Back part of comb or keel looks as if he had a side sprig.

I trust that we may be able to get satisfactory drawings that will represent the true ideals for which to strive and that they may conform closely, but not so that we shall not set before us a task impossible to accomplish.

In our Standard of Perfection the different varieties should be shown in their natural colors. Any one would pay a little more for the book if this were done.—A. T. Lindgren.

Possibly you have sketched the tail of the male a little large and a trifle long. I believe you have a better shape for both male and female than the 1910 Standard. You will remove, I think, the call for the separate utility standard if you succeed in having these sketches adopted by the association, because they give that longer shape to the hen that is so desirable for the heavy production of eggs.—F. R. Merk.

The two outlines as submitted are nearer my ideal of what the Leghorns should be than those figured in the new edition of the Standard. However, I do not believe that either of them literally interprets the wording of the Standard.

Of course you understand that when one starts to criticise a thing he will naturally put into that criticism his ideal, despite any illustration or printed text which might be before him. One's interpretation of the Standard then is what one wills to think. It is a fact, well understood, that most of us will, either consciously or unconsciously, think very differently about the same thing.

In criticising these two outlines I am going to proceed on the assumption that Mr. Schilling intended these to interpret the Standard literally. My criticism will also embody what to me would seem an ideal male and female shape, the literal interpretation of the Standard to the contrary, notwithstanding.

The Male: Head: Not enough vertical depth. Beak: slightly undersized. Eyes: Slightly small. Should be increased in proportion to head and beak criticism. Comb: Very good though slightly unbalanced over beak. Would desire it a little less angular in front. Wattles and Earlobes: Very good indeed. Suit my ideal exactly, though I do not believe they are literal interpretations of the Standard. Neck: Very good. Wings: Outline too angular. Back: All right. Tail: Very satisfactory for shape and carried at an angle that is very pleasing and desirable but not in accord with Standard. Standard calls for forty-five degrees, outline shows tail carried at twenty-four and one-half degrees (see sketch). Breast: Too much of a curve, should be filled in a little as indicated by pencil marks. Body and Fluff: Seem too short at first glance but upon analysis would say that body is all right in length; the trouble lies in fluff and breast. Fluff should be slightly more rounded. Legs and Toes: Length of shank a trifle short and decidedly thin. Hock has about the right amount exposed, but is a trifle light for this weight bird.

The Female. Head: All right. Beak: Very good. Eyes: Slightly small. Comb: Very good. Face: Good. Neck: Good. Back: Very good. Tail: Leaves the impression of being too short, however, this may be due to the fact that there is too much cushion. Would say that cushion should be decreased or tail lengthened. Couldn't tell which would give correct impression but there is an absence of pleasing balance in this section. Here, as in the case of the male bird, the angle or carriage is pleasing to look at but not in accordance with Standard requirements. Breast: Good. Body: A little light at fluff and just a trifle thick at junction of wishbone and sternum. Fluff should be slightly lengthened, lowered and rounded. Legs and Toes: Proportion very good but seem awkwardly placed and stiff.—Yesterlaid Egg Farms Company, R. C. Lawry, Mgr.

I have made an effort to go over them carefully. Have criticised them a little, but have no serious objections to the shape of either. They are both very good indeed.

Male bird: Tail is carried a little too high to suit my fancy. Neck, breast and body are ideal. Would lower tail about one-eighth of an inch.—R. A. Alexander.

I think they are a decided improvement on those in the new Standard. While I consider myself quite a Leghorn crank, I have no criticisms to make of these suggested ideals. In my judgment the picture of the White Leghorn male in the new Standard, is, to use the slang phrase, bum. However, I notice that in order to win in the big shows we have to have the tails of our Leghorn male birds below 45 degrees.—F. D. Rogers.

The sketches of Leghorns, male and female, that you submitted are just about ideal, in my opinion. It seems to me there might be just a little more fullness in the upper part of the neck (rear portion) of the male and possibly just a little more below the hackle where it approaches the back.

It seems to me that the back of the female is just a little long and could be just a little more concave. Her neck may be just a trifle fuller about the throat or just below the wattles.—Dr. F. M. Reed.

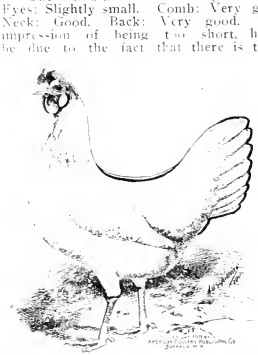
The two outline sketches sent us of the Leghorns, male and female, are as near perfection to our mind as anything that we have ever seen, and if the American Poultry Association keeps near these outlines we shall be perfectly satisfied.—W. R. Curtiss & Co.

Think they are ideal interpretations of the Standard text. We do not know where we could criticise these sketches.—W. A. Bode.

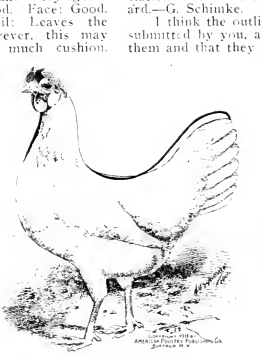
As for the male in the 1910 Standard, I think it not right because we want the curving back. This has been taken away and I think it wrong to spoil the breed in this way. The outlines for Leghorns, male and female, you sent me I think are right and what we want. Let's keep the nice curve of back.—F. C. Gutknecht.

I hardly think I can cut them a point. They have the true Leghorn shape. I think the American Poultry Association should use these shape outlines in the next Standard.—G. Schimke.

I think the outlines of Leghorns, male and female, as submitted by you, are fully up to what we wish to have them and that they fit the Standard description.



The heavy black lines illustrate the criticisms of A. T. Lingdren of California. Mr. Lindgren's changes show less depth of body and more length of shank



The outline of female as changed by Dr. F. M. Reed of Illinois, shows a finer neck, less depth and length of body with a slightly higher tail. These changes are shown by the heavy black line in the above illustration.

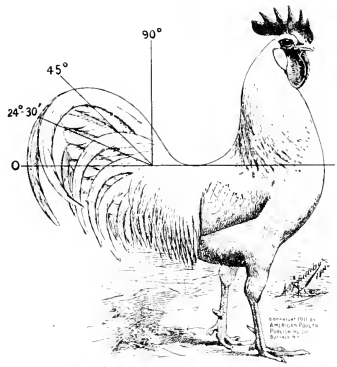
The comb of the male is about right. I do not know why the artists put the legs so far apart in almost all drawings. It is not natural in the first place and in the second place it is very hard to get them true.

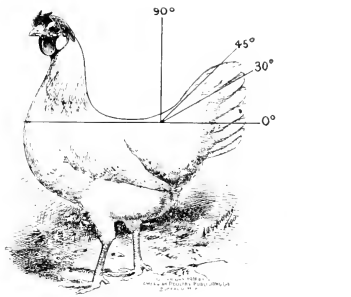
In the female the one thigh is too far back—or the whole leg.—W. W. Kulp.

After looking over the Leghorn cuts, male and female, you have submitted, I have no criticism to make, other than to say these drawings are exactly my idea of what Standard Leghorns should be. I think the cut in the new Standard of the White Leghorn male is a very bad one.—E. A. Vosburgh.

I have very little fault to find with these drawings. My criticisms would be as follows:

Male: Comb is good. I think much better than in our Standard. Wattles are good. Earlobes are a little too large, or too long, in my estimation. Body shape is good. Carriage of tail is ideal—in fact I think this cut of male is hard to criticise.





The above sketches show the points taken by Rolla C. Lawry of Missouri, in proving that the angle of the tail in the sketches for the Leghorn male and female do not coincide with the text. Notwithstanding that both are carried at a lower angle than is called for in the Standard description, the letters published herewith often indicate a preference for a lower carried tail. Should the Standard be changed?

Female: Comb is good, except the second serration, which I think stands a little too much erect. Wattles and earlobes good. Neck, I think, could be improved a little; it looks as though it should be a little fuller just under lower edge of wattles. This change on neck I think would improve shape of breast, which looks to be too much on the full order, especially when you take into consideration the height of this bird and length of the neck, also the depth of body; this causes a squatty appearance. Back and tail are very good. Tail especially is ideal. Shanks look a little short to my way of thinking.—E. Endsley.

I have only one thing to say. I think the second point from the front on male sketch a little long. Every other way they are my ideal of the correct Leghorn shape.—Joseph Reiff.

Can find no fault with Leghorn shapes.—J. Leroy Cunningham.

I admire this Leghorn male outline very much. I believe it to be the most satisfactory outline I have ever seen. I would criticise it in only one respect—legs and thighs are too fine. This criticism I would apply to both the drawings of male and female, although in the case of the female it would apply with reference to thighs more than to shanks.

I would commend the back and tail of this male particularly. Here the artist has given us more curve to back and has brought it up on to the tail with what I consider the correct concave sweep, eliminating the break made at the base of the tail, which appears in so many illustrations—even those in the new Standard not being free from this defect and this, too, in spite of the very plainly worded text.

I certainly hope that in arriving at a composite from the criticisms of this drawing it will not prove necessary to alter the shape of this male in any material degree, for it meets my ideas to a T.

The drawing of the female I do not like nearly so well. The bird hasn't the daintiness and gracefulness that we want in Leghorn females. I would suggest the cutting off of a slight bit from the extreme front of the breast and adding it on just in front of the thighs. Back and body should be longer and this length could best be added back of thighs. The upper fluff should be more compact, as the bird seems too deep, measured through at the base of the tail. Main tail feathers should be given a greater length and should be carried at a higher angle. The angle of the tail would probably be right as the artist evidently intends us to measure it—along the line of the front of the highest tail feather—but to measure it along the quill of the upper tail feathers, as seems more proper to me, especially here where the upper feather has been drawn with a very rounded upper edge, would show the tail much too low.

A certain alert gracefulness in males and a more modest trimness and daintiness in females, coupled in both sexes with a suggestion of activity and business, should be the ideas conveyed to the observer of well-bred Leghorns. I know these are difficult to show in mere drawings, but our artists have succeeded in doing it in some instances. Mr. Schilling has succeeded remarkably well in his male drawing. I wish the female could be brought up to the same standard.—Clarence Hewes.

I think the cut of cock is a very fine one and I believe it to be nearer to the description of the Standard than any cut I have ever seen. The only exception I think is I would prefer the thighs and shanks a little heavier. I admire the comb, which is truly a medium sized comb.

In regard to the female sketch, would say, the general outline is almost perfect. The only fault I find is the second point on the comb should be just a little lower.—C. W. Sixt.

I regret that my abilities as an artist are too obscure for me to attempt any improvements on the sketches you have sent me. On the average these sketches are a vast improvement on those in the new Standard.—Geo. O. Brown.

I have compared the sketches of popular breeds received from you with the Standard description and must say candidly that they meet with my hearty approval. They represent in my opinion the ideal in the full plumage of maturity. I would not suggest any changes.—C. H. Rhodes.

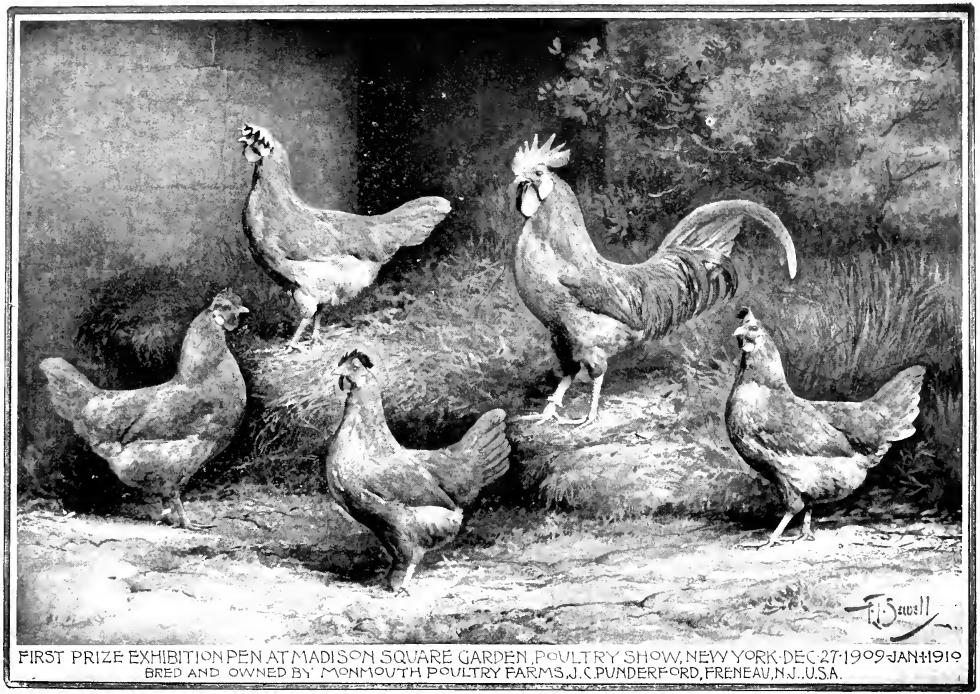
I prefer a more slender, upright male and a shorter, slight female. Cut away breast as shown in the female and reduce the size of tail thirty per cent. Thighs should be longer, giving us a more upright and sprightlier bird.—I. K. Felch.

The sketch of S. C. Leghorn male as given for White Leghorn in the 1910 Standard suits me. I like the upright carriage of tail because it adds style and gives the male bird a more alert appearance which is essential to Leghorn character.

The 1910 Standard illustration of Leghorn female suits me much better than this too coarse headed bird in the sketch you have sent me.—D. T. Heimlich.

I am of the opinion that the Leghorn male does not correspond to the wording in the Standard, as well as does the Brown Leghorn male illustrated in the present Standard—that is, taking everything into consideration. In the first place, the comb and wattles are too large, and the head is too long, and certainly the bill is too straight. If you were to dub this bird he would not look unlike a game. Take a pencil and remove the comb, wattles and lobes and you will see how much he resembles a game. The neck is too long and there is entirely too much tail to this bird—in a big wind he would blow over. Thighs are very light.

Leghorn Female: She is a trifle small in the thighs and possibly a little low down. The tail coverts are car-


FIRST PRIZE EXHIBITION PEN AT MADISON SQUARE GARDEN, POULTRY SHOW, NEW YORK DEC. 27-1909 JAN-1-1910
BRED AND OWNED BY MONMOUTH POULTRY FARMS, J. C. PUNDERFORD, FRENEAU, N.J., U.S.A.

Single Comb Buff Leghorns

A remarkably fine pen of birds in type and head points, the male and females being rich golden buff in surface color.

ried too high. I would prefer, as far as the Standard description is concerned, the Brown Leghorn female as being near the present Standard.—W. R. Graham.

In Leghorns the S. C. White male and the S. C. Buff female conform to Standard in shape description.—E. C. Branch.

Leghorn male comb a little small and wattles are a little but pinched. Back a little too short; otherwise it is fine. Female neck is too slim and delicate looking; tail a little too much arched and too loosely folded. Otherwise I like it.—F. J. Marshall.

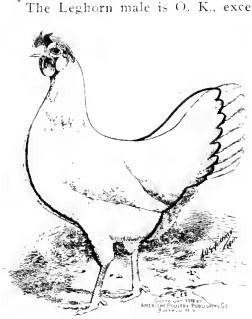
In my judgment the drawings submitted to me are far superior to the ones in the new Standard. I for one would prefer these ideals to the ones in the 1910 Standard.—U. J. Shanklin.

While the sketches do not cover all the corrections that should be made in the present Standard, they meet my hearty approval.—J. C. Johnson.

Each sketch might well replace the illustrations in the present Standard.

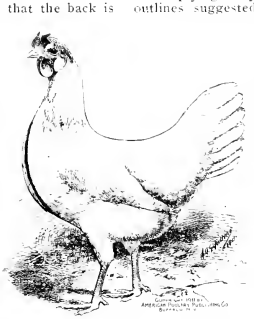
In the Leghorn female the back appears too long.—B. J. Hill.

The Leghorn male is O. K., except that the back is too low in the center, which gives the tail a low appearance. Female is very satisfactory.—Jos. Dagle.



I. K. FELCH'S IDEAL

As will be noted by the heavy lines Mr. Felch's ideal is considerable shorter than the majority of prominent Leghorn breeders and judges favor.



R. A. Alexander of West Virginia, suggests less fullness and prominence in breast, as is shown by the heavy black line in the illustration.

The sketches of Leghorns are splendid. The male is O. K., except that back line should be a more perfect concave, which would relieve the appearance of too much length of body for a Leghorn. Back of the female is too long and the legs are set too far back on body. Illustrations in the 1910 Standard are much better.—W. H. Card.

The neck of the Leghorn male appears to be a trifle too long and I would make same criticism about the tail. If the sickles were carried more upright, it would present a better appearance. The little toes should be shortened a trifle. The sketch of the female is good, if the second serration of comb would droop a trifle more.—Theo. Faulstich.

If you take the tip-toe appearance from the male and a trifle of the fullness of breast from the sketch of the female the Leghorn sketches would pass muster with me. —H. B. Savage.

Shape of male and female very good, but I like type in new Standard better.—Chas. H. Ward.

I am returning the sketches herewith with the suggestions that I have made for same. Should say that the front of the comb of the male projects a bit too far over the beak, which would have a tendency to develop thumb marks. The back has not quite the sweep or length that I would like to see. Am not an advocate of the extremely low tail, but for the Standard male would prefer a little more length of back than the sketch shows. It strikes me that the legs show a little too much shank which tends to create a gamy type.

Would also say that the position of the head and neck is a little too upright and straight. Moving both forward would no doubt give more of a sweep to back and lengthen same.

The only fault that I can see with the female is a little too much breast. She is also too deep in body. The Standard calls for "fairly deep."—J. C. Punderford.

I consider these shape outlines about as good as needed.—Geo. S. Barner.

Comparing the drawings in the new Standard and your sketches of Leghorn shape, it is my opinion that the latter are better in all details except in the comb of male. I consider the comb on the male in the Standard the best model, as it shows more size and I think finer texture. It does not appear so beefy and stands up well on head. I believe that many breeders are injuring the utility qualities by breeding weak birds that have small combs. I am not a beefy comb advocate, but prefer a good sized comb and one that is fine in texture.—B. E. Craig.

I must say that your outlines illustrate the ideal shape for Brown Leghorns and I truly hope that every breeder and every judge will recommend them as such.—Paul Scott.

Replying to your letter asking for criticism of the outlines suggested for Standard Leghorn shape, would say that on the whole, I do not like the outline of the male as well as the one in the Standard, present edition. The head is very good, but the blade of the comb should be about the width of a pencil mark deeper; that is the bottom of the serration should come more nearly on a line.

The comb on the Single Comb Brown Leghorn male in the new Standard is a little too heavy especially at the rear, it is just as much too heavy as the one in your sketches is too light at the rear. The earlobes should be broader at the top and conform in shape to those on the Brown Leghorn male in the old Standard.

The outline of the S. C. Brown Leghorn male in the new Standard would serve very well if the head were carried a little further back, which would give the bird more life and style. The shanks are portrayed a little too large.

Your sketch is altogether too high at the shoulder and there is too much width at the base of the tail, making the bird too heavy in the rear. Owing to the fact that the bird is posted so high on legs, the outline of the back is not a natural curve. The one in the new Standard is better, and is about right in my opinion. The illustration lacks in art, the head being too far forward and the main tail sickle feathers might be better covered with lesser sickles. The outline of the S. C. Brown Leghorn female on page 139 of the new Standard is very good, but I do not like the head and comb. The breast and back are very good, but it is a question if the breast is not too heavy, also if the direction of the last three main tail feathers is right. It appears as though the photograph was taken after these feathers were broken down.

The sketch you have submitted is altogether too heavy in body and shank. The body in general is too much of an oblong or Dorking shape, in a miniature way. The head is very good except the earlobes are a trifle large and too long. The neck is too small and the breast is altogether too croppy. I do not consider it as good an ideal as the one in the Standard, taking the White Leghorn illustration as the ideal, for it is very difficult to see what the outline of the Brown Leghorn female in the Standard is intended to be.—A. C. Smith.

Regarding the sketches of Leghorn male and female sent to me, would say they are satisfactory with the exception of the comb on the male. I think it a trifle too short for the width.—Ezra C. Carter.

In regard to the sketches will say that they are the best I have seen to date. They depict a more ideal Leghorn than some photos and are far better than those in the 1910 Standard. However, I would like to see a still better outline, a male that is longer in back, and if you will shorten the middle toe a trifle it would be perfect.

Regarding the hen, will say that if a little were taken off the breast and the tail lengthened, she would be considerably better. Also I do not like to see the second spike on comb stand upright as much as it does. Laying everything aside, I wish I had fifty birds identical with the sketches you have sent.—Paul C. Bork.

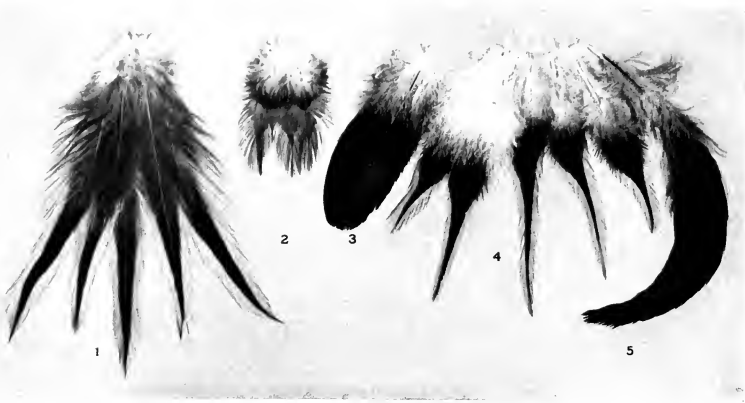
As to your Leghorn prints, they are fine.—Earl E. Wells.

They are surely a great improvement over the shape illustrations in the new Standard. I will not attempt to make any special comment, only that I like them.—Wm. I. Brace.

It is my opinion that the sketches of the Leghorn male and female that you sent me are away ahead of the illustrations in the Standard. However, I would suggest trifle longer wattles on the female, for as she appears in the sketch, her head looks chunky. Cannot see where any change could be made in the male.—E. C. Gilbert.

The blade of the comb on male is not deep enough and the tail is too prominent. The body is too long; suggest taking a quarter of an inch right through the saddle from a point on the back where the main tail joins. The female cannot be improved.—O. M. Robbins.

WHITE LEGHORNS FORAGING



Standard Color and Feather Markings — Brown Leghorn Male

PLATE I. — Illustrating the color and markings on plumage of modern Standard bred Brown Leghorn males. Reproductions of actual feathers selected by expert breeders from noted winners and representing the nearest approach to the ideal thus far attained. 1. Neck hackle. 2. Wing-shoulders. 3. Wing bar or covert. 4. Saddle hackle. 5. Tail covert.

Standard Color and Feather Markings — Brown Leghorn Female

PLATE II. — Illustrating the color and markings of modern Standard bred Brown Leghorn females that have been recognized by foremost experts as the nearest approach to the ideal they strive to acquire by the 1910 edition of the Standard of Perfection. 1. Neck. 2. Breast. 3. Wing shoulders and sides. 4. Wing secondaries. 5. Back. 6. Saddle.

CHAPTER III

Single Comb Brown Leghorns

History of Their Development—Uniform Flocks Bred Thirty Years Ago—Judges Differed Then More Widely Than Now—Old Style Leghorns Described—Factors that Have Brought the Brown Leghorns to Their Present Excellence—Changes in Scale of Points, Shape and Color—Ideal Leghorns of Today.

Arthur C. Smith

I AM very glad to furnish the readers of this book with whatever knowledge has come within the scope of my observations during the twenty years that I have been a breeder and exhibitor of this ever popular variety, and those facts which I picked up during the few years previous. It was the ambition of my boyhood to own the best Brown Leghorns that any one owned and therefore I began to study them as seen at the shows in my locality, about 1880 or a year or two sooner.

I have also recollection of a fine flock of these fowls that was kept on the next place in the early 70's. These may or may not have been "diamonds of the first water," but they were uniform as a flock. The females were medium brown in color, but the males were rather light red or yellow in hackle and saddle. These birds were in general appearance much the same as those of the early 80's. They were large in body, short in legs, and heavy in combs. Briefly put, the general tendency during the past thirty years has been to develop a dark red, even colored male and a finely penciled, seal brown female. This, so far as color is concerned, may be said to be the goal of our ambitions. To trace the revolution of the modern Brown Leghorns, step by step, but simply in outline, will be the aim of the greater part of this article. If some of the older exhibitors would give us a treatise on this subject, considering the years covered by each standard as a period of flight of steps in the ascent to perfection, and each year as a step, it would form an instructive and interesting work.

The Old Type of Leghorn

The type then was certainly different from the type of today, but the male has not changed to so great an extent as the female. Judges differed in their opinion in those days much more than they do today, therefore, the winning specimens often showed a great variety of types.

The males of the early 80's were as a rule very much lighter in neck and saddle than those of today. A male without a pronounced yellow saddle was the exception. Still, it is a fact that other things being equal, the darker male usually won. There was at that time as now, a constant leaning toward darker color and there appeared occasionally a male as dark as those of today.

But with all the changes in the type of the male, they are comparatively small when considered with the changes made in the type of female. This sex had ha dly outgrown the appellation of Red Leghorn, which was applied to it from the very first. The breast was rather reddish salmon. The wings were red, or bricky, as they were called and the neck weak in striping, while the back and wings showed prominent light shafting and the penciling was much coarser than it is at the present time.

The Old Standards.

The standards of 1875, 1879, and 1883 are practically identical and call for a long, well arched and well hackled

S. C. BROWN LEGHORN HEN "PRIDE OF LEGHORN ALLEY"
Winner of first prize at Boston, 1898. She shows the large bodied type of Leghorn, such as bred at Grove Hill Poultry Yards.

neck, the hackles being a rich golden bay, striped with black. This is substantially the language in all these standards, but like some phrases in the present standard, it is capable of an elastic interpretation. The necks were, as a rule, darker than the words "rich golden bay" would imply, the top being darker than the base.

The wording of these standards on back is, to say the least, peculiar and leaves us in doubt as to just what is meant. The reading of this section is: "Very dark red, approaching black on the lower parts, each feather striped with golden bay." This certainly reads as though the standard makers intended to get very dark red feathers with broad golden bay shafts. The males of those days did show what would today be considered very broad shafting, but it hardly amounted to a stripe even in the most pronounced examples. That the black-striped saddles were in vogue and found favor as early as '82 or '83, perhaps before, is certain. The writer secured a male as early as '83 or '84 that was so strong in that particular as one could be, and it was purchased of Tait and Baldwin, which firm had won largely at the National show at Worcester in 1883. This bird was a large six-pound, vigorous fellow and the results of his influence is often noted in the flock even now.

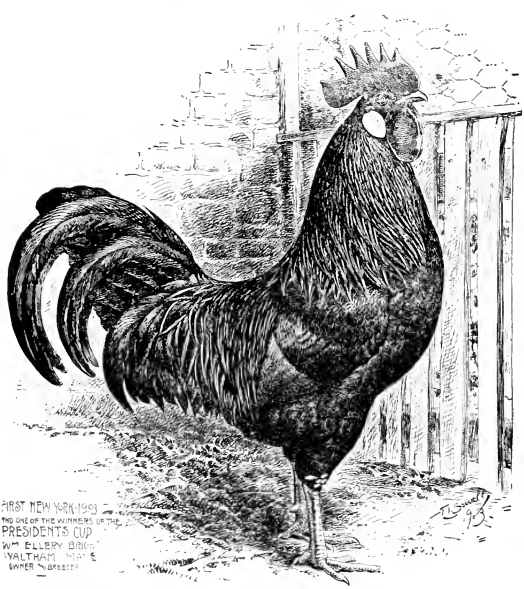
The Dark Craze

The language of these standards shows plainly that an even colored bird, that is, one the same shade of red in hackle and saddle, was not desired. The birds were much darker at the top of the neck than at the base, and rather darker on the back and wing bow than on the saddle. The dark birds grew in popularity during the 80's until they reached a point where the red was so dark that it could scarcely be distinguished from the black. Most of these birds were still some shades lighter at the very base of the hackle.

This lack of contrast in the two colors gave the birds a dingy look and a reaction followed.

This was before the days of double or special matings for either sex. Each mating was supposed to produce good males and females, and while some did produce good males and poor females and vice versa, it was merely accidental and far from being the result of any design or foresight of the breeder.

It was but natural then, that while the males were growing darker the females were also and, as that is their tendency in a dark line, they became very dark and were, as a rule, coarsely penciled. They were not much in disfavor, however, for a time, and I have seen females almost black score 93 to 94 points. Light shafting was still prominent in the back and wing, but the latter did not show as much of the red as formerly. About the happiest result of the "dark craze" or "black craze," I was about to call it, was that we were permitted to see a very few males of that seal brown plumage, free from shafting and also free from the reddish or bricky shadings that were ever so distasteful.



S. C. BROWN LEGHORN COCKEREL "WORCESTER VIII"
Winner of first prize at Madison Square Garden, New York, 1903. Bred and exhibited by William Ellery Bright, Waltham, Mass.

Reaction Against Dark Birds

The reaction against the "crows," as some called them, had been growing and became a strong movement during 1886-1888. Several men had been breeding from both lighter males and females all along, and previous to these dates had received some recognition, but they were now in a fair way to obtain reward for their firmness and perseverance. The movement for lighter males halted at the "middle ground," but that for lighter females went farther and we had our "penciled with a golden brown" standard. That meant that the lighter markings of back and wing should be of a yellowish brown shade. This style of a female became very popular. The shade of color on the back and wings outweighed everything else. Coarse pencilings, light shafting, red wings, weak hackles, poor combs, light or dark colored legs were all admissible so long as that one thing desired—a golden brown penciled back—was present. In other words, just as we were on the road to the handsomest and most admired type—a seal brown, free from shafting in back and wing and clear salmon in breast—the standard makers allowed themselves to be pushed too far by popular clamor and, in the opinion of the writer, went even farther than the popular demand.

The golden brown females were "the thing" for several years and for a time the orange red males lost

none of their popularity. A growing dislike of the lighter color at the base of the neck was soon apparent to the best breeders, and even surface color was sought by the most progressive. "I do not like that light ring at the base of the neck," was a phrase applied to many a bird of unquestioned merit. In deference to this demand for an even colored bird, the last standard was made to call for a dark, rich red, having one shade of red in hackle, saddle, back, shoulders and wing-bows, or in all red sections.

Double Mating a Necessity

With the demand for colored males, there still remained the preference for the golden brown female. This dissimilarity of popular types in male and female is responsible for our double matings. They came as an absolute necessity when light females and dark males were winning under our best judges. It should not be forgotten that the practice of double matings became universal when the breeders realized that light females and dark males could not be produced from one mating.

There soon came a change in the popular idea of what a model female should be. Breeders realized after five or six years' work with the golden brown penciling that the Standard, by binding them to one precise and exact shade of color, barred out some of the most taking and desirable females. Be what they might in shape, in color of breast and neck and in penciling, they seldom would win without that one feature of overwhelming merit—a golden brown back. This one quality outweighed everything else. Good penciling, rich yellow legs, a nicely striped neck, a splendid head and grand shape were as nothing when compared to a golden brown back. The breeders gradually realized the absurdity of this position. A change was demanded which should recognize fine penciling of two, and only two, shades of brown in back and wing, thereby eliminating that lighter shafting and placing on equal footing all shades of brown, so long as each was a soft, rich brown.

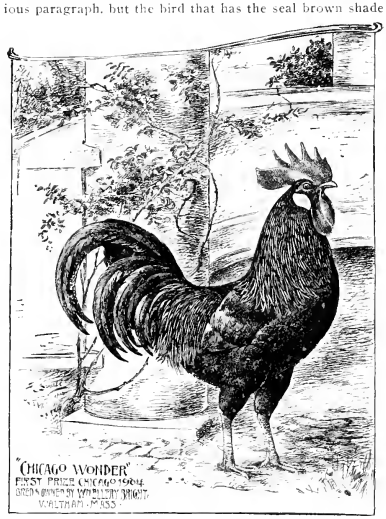
Changes in Scale of Points

The scale of points has changed somewhat. Now a good hackle and saddle will sell a bird, but then only five points were allotted to each of these sections, while the comb counted fifteen points and the wattles and lobes were regarded as equally important. The growing importance of color can be seen by following the changes in the scale of points. In the scales of 1875 and 1879, comb, wattles and lobes counted fifteen points each, while the head counted seven. This gave a total of thirty-seven points, over one-third the total valuation of the bird, to the head alone, while the important color sections, viz.: Hackle, saddle and wings, were given only fifteen points, both for shape and color. Symmetry, size and condition counted thirty points more, thus leaving but thirty-three the shape and color of the entire specimen. The of 1883 revised that considerably by cutting the obes and wattles down to ten points each while n and size were cut to eight and five points re- dly. Neck and back were raised to seven points and wings very properly to eight points. This scale has remained except that in 1888 shape and color valuations were divided and in the last Standard five more points were given to size, these being taken from head, symmetry and condition.

Ideal Leghorns of Today

What the Brown Leghorn of the future will be remains to be seen. The present ideal in males is a dark, rich red of the same shade in all red sections—an even surface colored bird with strongly striped neck and saddle, yellow legs that are what the name implies and a good, five point comb, free from those hideous thumb marks and wrinkles which are more objectionable than too many or too few serrations. Such a bird is and will be popular. The shade of black in breast, wing-bar, tail, body and fluff should be a greenish black. The purple shade should be carefully avoided as it is associated almost always with minute bronze bars across the feathers, which if present are most pronounced in the wing-bars and coverts of the tail. This is an objection that has been much overlooked in past years, but one that is certainly meeting with great disfavor at the present time.

The female has been pretty well described in a previous paragraph, but the bird that has the seal brown shade



SINGLE COMB BROWN LEGHORN COCK

The illustration above was drawn from life by Franklane L. Sewell, at the Chicago Show in 1894, and is one of the best portraits of an adult Brown Leghorn male we have ever seen. But "Chicago Wonder" was a remarkably fine specimen, being almost ideal in shape, size and color, a rare combination seldom found in one specimen. Bred and exhibited by William Ellery Bright, Waltham, Mass.

on back and wing is to become the popular favorite, even if it has not done so already. Any suggestion of red on the one side or of grey on the other will not be tolerated for a moment by a true student of this variety. It is, or should be, a Brown Leghorn. Grey Leghorns we never had. Red Leghorns we did away with long ago.

Changes in Shape

Thus far nothing has been said of the change in shape during all these years. There seems to be a general tendency in all breeds to grow smaller and Leghorns are not the exception to the rule, but rather a close exponent of it. The Leghorns of the early 80's were many of them large in body, but shorter in legs and coarser in head than those of today. They gradually, but somewhat rapidly, decreased in size until they became so small that in 1890,

or about that time, a concerted movement was started to increase the size of this variety. This met with success and in a few instances was overdone to so great an extent that some strains lost all semblance to Leghorn shape, being too long in body and too flat on the back for typical Leghorns. Such are valuable as breeders with smaller strains of well formed birds, but the extreme size that destroys and makes Leghorn shape impossible should be discouraged.

You may ask, "To what do we owe the improvement in Brown Leghorns?" To just two things. First, the Standard is now just what the breeders want, and, second, the judges are men who have bred these birds. Formerly every show hired three judges, one for the American class, one for the Asiatic class and one for pigeons. The remaining classes had to take the judge that finished first. Exhibitors suffered much from these well meaning but incompetent men. It is only within the past four years that a Brown Leghorn breeder has been selected to judge a show of such magnitude and importance as the Madison Square Garden show. The result has been far reaching in aiding the establishment of the true type.

Color Breeding in Brown Leghorns

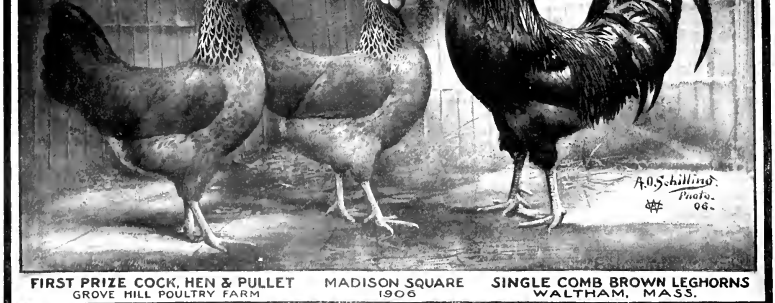
The History of the Production of Some of the Finest Brown Leghorns Ever Produced—Star Birds of Other Days, and the Ideals to Which they Were Bred—Remarkable Results Obtained by the Crossing of a Black Leghorn and a Brown Leghorn Male—Double Mating is Essential to Success.

W. Theo. Wittman

THE writer may as well confess that his taking up color breeding in Brown Leghorns was merely an accident of circumstances. A shift of the wheel of life made it again possible to breed chickens and some real good Single Comb Brown Leghorns, from which eggs for hatching at a low price could be had, being handy, a start was made with them.

The Madison Square Garden poultry show was then a comparatively new thing and wishing to know, at first hand, just what the color of Brown Leghorns was, or had to be, we visited the above exhibition several years in succession, practically for this express purpose.

Those were the days when "Chet" Howell and George Burgott were showing their then famous females—"Venus," "Venus II" and "Nina" and "Nina III;" while in the winnings James Forsyth and Wm. Ellery Bright were to be reckoned with, both in males and females, W. W. Kulp appearing just a little later with a wonderfully colored male, followed by Herbert Smith with a really sensational bird.



A Great Trio of Brown Leghorns

Winning the blue ribbon at New York with cock, hen and pullet, in the Brown Leghorn classes is a notable achievement. Grove Hill Poultry Farm did this in 1906 with a trio of birds that not only had the color but the Leghorn type and style combined.

We have or had some feathers from both the Howell and the Burgott champion females as well as from some of the males mentioned and they are particularly interesting after this lapse of years.

Light colored females and heavily striped males at no matter what cost as to other qualities were then demanded. The writer thought he knew then considerable about the theory of color breeding and was endeavoring to put his beliefs and theories into practice. It was as easy as seeing a haystack that color was the big IT in Brown Leghorns, as it is in fact today, and probably always will be.

About Single Mating

The first two years was wasted in following the will-o'-the-wisp of single mating this variety and I should like here to emphasize that word "wasted." Plenty of advice could be found in the poultry papers of those days how to single mate for results or, if using double mating, what to look for and what to avoid in the color and marking of the breeders. When put into practice these proved themselves to be all wrong and in the light of what I now know—which, by the way, is not nearly as much as I should like to know—I cannot remember a single article that was of any value to me.

The theory that Brown Leghorns being of the black-red type or of the natural color scheme as found in the parent stock of the gallinaceous race should be easy to modify or control, soon had to go to smash. It was true all right that red pigment is never found to exist alone in the plumage of fowls, but how to modify what red there was into a light brown, in fact, how to make out a red Leghorn a light, soft brown one, free from the glaring faults that went with this color, seemed well nigh impossible and was impossible in a single mating. The heavy, striping, too, in males seemed foreign to the black-red male and it was some talk overheard at the Garden show that a certain breeder had used Partridge Cochin blood to get size in females and color in males, that gave me the idea that there might be something better used to produce brilliancy and striping in males.

After about a year's search a Black Leghorn female was found that promised well and having a splendid bright male the two were mated. The results surpassed all expectations and at one jump, from having little or no striping, there was striping to burn. An abundance of black pigment had been supplied and the reserve laid by to last for many years. The young males from this mating had such brilliancy of plumage that the tails were not figuratively, but actually green. They were coveted, too, but none were sold the first year. Then the second year some were sold (six in one week at $25.00 each) and later on, eggs for hatching were sold. It is to be feared, judging by the letters they wrote, that some of the buyers of these eggs still believe me to be a rascal. The pullets from those eggs, or the most of them, would grow up with dark, almost black legs and without the usual salmon colored breasts, the breast being of the same color as that of the back. Writing these people, that they were from cockerel line matings and very dark blood on the female side would not satisfy all of them.

A FAMOUS BROWN LEGHORN HEN

The Single Comb Brown Leghorn hen illustrated above, Arthur C. Smith, manager of Grove Hill Poultry Yards, claims to be the greatest Brown Leghorn hen that ever lived. She won two first prizes at Philadelphia, one at New York, Boston and the Pan-American Exposition, all as hen. She also bred first prize winners at all of the above shows and other shows.

Persistence in discarding any females for breeding that did not have a good strong hackle and plenty of green sheen showing over back and tail made it comparatively easy to hold brilliancy and color in the males and, as showing how good blood will persist in cropping up, one of the best males that has appeared within the last two or three years, or for that matter, that has ever appeared, is a direct descendant of that Black Leghorn hen and the bright male.

Honor to George H. Morris

About 1896 I made the acquaintance at New York show of a man who has done more for good colored Brown Leghorns than any other man living or dead. I refer to George H. Morris, of East Orange, New Jersey, who was exhibiting a hen at the Garden that year that did not get a place. Later on this man by a happy union of Howell and Burgott blood, produced a pullet that in February, 1899, won second place at Madison Square Garden.

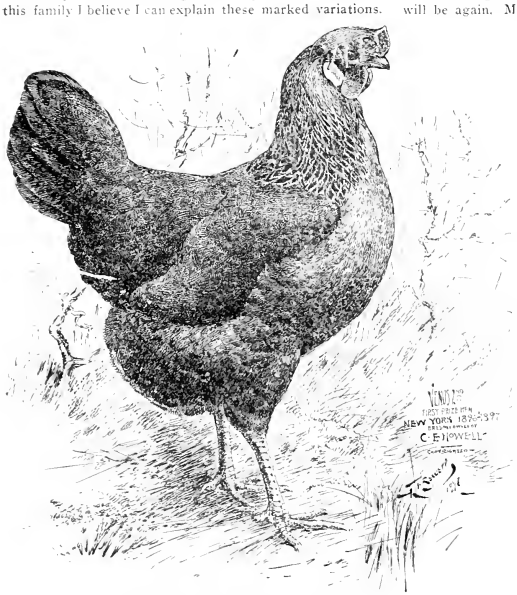
Perhaps as much as 90 per cent of the show Brown Leghorn females of this country today carry in their veins the blood of this female. Practically no other blood has won at the Garden since and even in very late years females have appeared at this show that were the simon-pure descendants of this female. Mr. Morris made few friends, but with those he did make he was willing to discuss Brown Leghorn color breeding by the hour. He never advertised; he never sold any birds. He bred his famous strain or family only a few years, but in those few years he built well. To this foundation it was left to the writer mostly, in the years following, to build on in kind.

Mr. Morris believed in using a male, for pullet line

breeding, that was the result of line inbreeding good females for a series of generations, no matter how said male looked. Particularly was he indifferent to how far he failed to line up to the then accepted idea of how a pullet line male should look. What selecting he did, he did before the future sire was six weeks old. He so strongly believed in his theory that one year finding only one baby cockerel to suit him, he destroyed all the rest. The baby cockerel that was to be a future sire had to have the real, soft, brown color and be finely and evenly stippled all over. Such birds were not plenty, but after some years of breeding such and such only, some of these baby cockerels would carry these stippled and soft brown feathers in back, wing and saddle hangers even into adult plumage.

Two Lines of Blood

On our place at Allentown, every hen was trap-nested and a strict and honest pedigree was kept, not necessarily for publication but for our own protection and advancement. The interesting fact developed that while this original hen and much of her get were strongly prepotent or had in them the ability to breed on, there were really two lines of blood in the family—what might be called a predominant line and a dormant line. Whenever this dormant line asserted itself there was a marked difference in the shade of color and the quality of the stippling and curiously enough usually a variation from the type. The predominant line also frequently split up and gave an off-colored specimen. Knowing intimately all the history of this family I believe I can explain these marked variations.



WINNING BROWN LEGHORN HEN, 1896
One of the most remarkable Brown Leghorn hens in color markings ever exhibited.

To start with, there was undoubtedly a dash of cockerel line blood in the make-up of the original mother hen and in a future generation a half-blood male of the family was used. The explanation of why the party who got the bulk of Mr. Morris' famous and unrivaled string of Madison Square Garden winning females never accomplished much, is that he had such a male only.

The males of this line were most decidedly not much to look at. In all the good ones the black was entirely lacking in lustre and of a peculiar quality readily recognized by the initiated. Many of them had no red in the wing-bows and altogether they were an unlikely looking lot. Inbreeding of the deepest kind made little or no color changes in these males, while intelligent selection coupled with the strict and glaring white light of the trap-nest steadily continued to improve and refine the females.

"Orange H," a male direct from Mr. Morris and the twice inbred son of the original hen, on his looks, would not have sold for $2.00, yet, without a question, he was the strongest sire in his variety, that ever lived. Bred back to his own daughters down to the third generation the zenith of his breeding powers was reached in the summer of 1904. In the fall of that year the writer had gathered together on one run forty-two selected pullets, every one of which was a star. Running with them were a few extra choice old hens, including the old original hen then still living in fine health, but no longer laying. Such a bunch of superbly colored Brown Leghorn females had never been gathered together before and perhaps never will be again. Many of the pullets were on the point of starting laying. All of them died of criminal poisoning, most of them being dead before the act was discovered. Although this reason was never given, it was the real reason why the business was sold to Exmoor Farms in December. The latter a few weeks later won first, second and third in both hen and pullet classes at N. Y.

Throughout his breeding operations with Brown Leghorns the writer never allowed himself to be scared into discarding a breeder with a white tip or even occasionally with white undercolor. Being an inbreeder of the deepest dye he was only afraid of lowered vitality, being well aware that burning a candle at both ends was suicide. Hence white flights and white tips were to him merely a reminder that he had sinned somewhere in the handling or feeding. Another thing he will always regret, that it was not until in the winter of 1900 that he began to appreciate the value of cold, fresh air on the color and plumage of Brown Leghorns.

Color disqualifications should be removed from Brown Leghorns and the writer is unqualifiedly committed to working towards this end. For instance, a male with a green stripe and a tail showing green lustre with a white undercolor, is a hundred times more beautiful and valuable than a dingy purple and purple barred one—a kind all too common in the show room of today.

Thirty Years Among Brown Leghorns

Reminiscence of a Veteran Poultry Breeder and Judge

George H. Burgott

THE winter of 1879 brought a poultry show at Buffalo, New York, and as our next neighbor, Mr. A. F. Conger, had arranged to attend it, my mother was persuaded to allow me to accompany him to this show. It was held in the ice skating rink, later occupied by the Cutler Desk Company, and which is now the Garden Theatre. This trip I well remember; it was here that I first saw Philander Williams, J. Y. Bicknell, Chas. H. Sweet, George C. Bucknam and I think Eldridge Comey. I believe W. H. Todd was also pointed out to me. I looked the birds over carefully, and how I did admire the Plymouth Rocks and Brown Leghorns, and it was at this show that I was made a fancier.

In the spring of 1880 my mother was appealed to for funds to purchase eggs. I decided to place my order with C. A. Keefer, a popular breeder of Plymouth Rocks and Brown Leghorns, for a sitting of each. Mr. Conger placed his order with W. E. Bonney for Brown Leghorns and with Sid Conger for Plymouth Rocks; this giving us a combination of eastern and western breeders' stock, so that we might exchange birds in the fall.

The result of my hatch from 26 eggs was 12 Brown Leghorns and 10 Plymouth Rocks. This appealed to my father and mother as a wonderful result for eggs having been transported about 600 miles. Twenty chicks raised to maturity.

First Exhibit Made in 1881

My first exhibit was at Springville, N. Y., January 12 to 14, 1881, winning second prize on cockerel and pullet in Rocks and second prize on cockerel and pullet in Leghorns. J. Y. Bicknell was the judge and I was decidedly happy with my scores and winnings. A cockerel was disposed of at $5.00, and I well remember that my father could not realize that a single bird should bring that amount, even though the eggs had cost $4.00 per 13.

The following year at the age of 18, I showed at Syracuse, N. Y., Springville, N. Y., and Cobleskill, N. Y., and Lancaster, Pa., under Judge Bicknell, Newton Adams and Capt. James E. White. I have before me a copy of the "Poultry World," Vol. 10, No. 5, May 1881. I note photograph engravings of Capt. White and others, who were connected with the revision of the Standard in 1881.

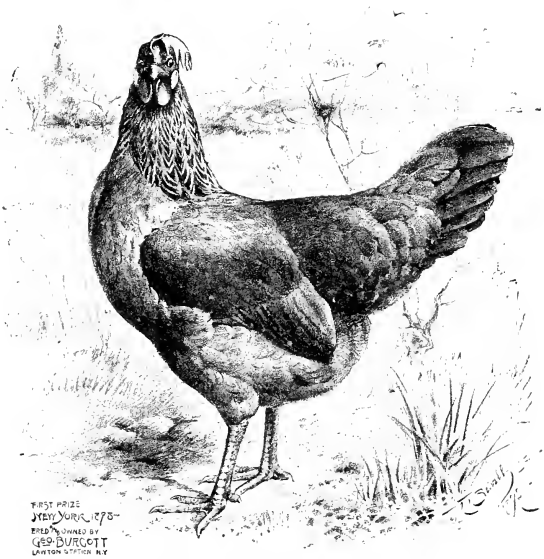
In 1885, I made my entry of some S. C. Brown Leghorns at the old Madison Square Garden, but on account of belated trains and late arrival of birds I was barred out. Mr. Bicknell, however, was instructed by the secretary, Chas. R. Harker, to score my birds, which was some satisfaction to me, two birds receiving scores of 96½.

After these winnings, not being satisfied and wishing to see what others had done, and how they did it, a trip was made to Mr. Keefer's yards at Sterling, Ill., and it was on this trip that Capt. J. E. White and Geo. T. Pitkin gave me some valuable information during my one day's sojourn with them at Chicago. I think this was in 1883.

Only a few years was spent in breeding Barred Plymouth Rocks and my stock was closed out to Geo. K. Siston, a banker of New York.

Color of Brown Leghorn Females

The color of the female Brown Leghorn from 1880 to 1890 was varied by a cross of a Keefer female and a Portage male. A better male was obtained and by a cross of a Keefer male and female the better male was obtained. These two lines were maintained and better birds were produced. The Browns of 1880 to 1888-9 were unlike the Browns of today in both type and color; the male was de-



SINGLE COMB BROWN LEGHORN HEN

One of the finest specimens of a Brown Leghorn female ever bred or exhibited was "Nina C." owned and exhibited by George H. Burgott. In style and shape she was ahead of her time, while in color and stippling she was equal to the best bred and exhibited twelve years ago.

cidedly light in color, poor in lobes, no stripe in saddle, and not the male we have today. The female was decidedly dark in both shades of brown in back, wing and tail coverts, with nearly a red breast; not a bird that could be admired as the dainty Browns of today.

In 1894, Madison Square Garden Show was visited. Jas. Forsyth, Tenny & Harrington, Geo. H. Gallinger and several others were exhibitors in Brown Leghorns.

The idea of a better colored specimen was eventually started at this show, and when the revision came at Boston in 1898, with the assistance of Mr. Drevenstedt and that past master of Browns, F. B. Zimmer, a Standard was formed that made the dainty Brown Leghorn of this date. Type in the Leghorn was also looked after.

"Nina" who won something like 20 firsts and at 8 years old won first at Cleveland show at the Grand Central Armory, under B. N. Pierce, was grandma of Nina C., who won 3 firsts at New York, 1st as pullet in 1897, 1st as hen in 1898 and 1899 and her line is very creditably outlined by Mr. Wittman's valuable article on Browns on page 38.

Jas. Forsyth, who won many a first on Browns at New York, Madison Square Garden, is to be credited for his work in improving them, as is C. E. Howell, who showed many a grand "Venus" line female.

It was at this time when Mr. Morris became interested and did so much scientific work, so did Mr. Wittman begin to produce some elegant birds. I will never forget the many questions put to me by that genial gentleman, Mr. Geo. H. Morris. However, he accomplished what he desired and then dropped out.

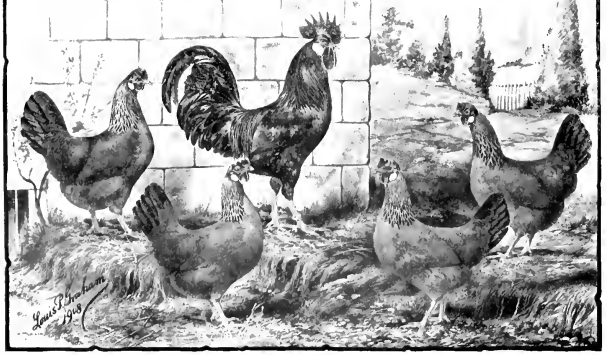
Judging Brown Leghorns to many breeders may seem an easy task, but my thirty-one years' experience with this variety has convinced me otherwise. It has taught me to use caution in placing awards on Brown Leghorns, in fact too much caution cannot be used in executing the work of placing the awards.

ROSE COMB BROWN LEGHORN PULLET
A beautiful pullet in color markings, with nice head points, good depth and length of bird and well spread tail carried at the proper angle.

Every section of the bird must be carefully examined, all must be looked after in surface and undercolor. This, where you are handling from 15 to 40 birds in a class, must all be conveyed to the mind and left there, for the final roundup of the winning specimens. To all this labor is added the shape and type of the Leghorn which also must be borne in mind when making the final awards.

A thorough knowledge of the Standard and the ability to apply it, as well as an inborn love for the breed, are necessary qualifications when judging Brown Leghorns or any other variety of poultry.

The recent revision of the Standard, if carefully and thoroughly studied will enable the breeder to know what a good Brown Leghorn is. The best and briefest description of the proper shade of color in the male and female is, it should not be too light, neither too dark. The medium shade will catch the winnings. If the male possesses the Standard requirements in neck, back, wings and the same applies to the female, with good headpoints, these qualifications will bring the specimen well up in the front.


WINNING EXHIBITION PEN S.C. BROWN LEGHORNS
NEW YORK, MADISON SQUARE GARDEN
Bred, Owned and Exhibited by
GEO. H. BURGOTT Leyions Station, N.Y.

A WINNING PEN AT MADISON SQUARE GARDEN, 1908

The male and females in the pen illustrated above, not only exhibit the fine color markings, but show the sprightly carriage of the modern Brown Leghorn and represented the highest types of Brown Leghorns in vogue in 1898.

Brown Leghorns, Past and Present

A Review of the Standard-Bred Brown Leghorns of Twenty Years Ago and Those of Today

Jos. F. Carter

BROWN Leghorns were my first love in poultry, and for more than a quarter of a century I clung to them with almost bull dog tenacity, despite the fact that the Standard has done more to injure them than a dozen years of good, faithful work, on the part of those who champion their cause, can undo. However, I believe the damage will be undone and that the Brown Leghorn will again come into its own. The older breeders can remember that wherever one went, there the sprightly, brown, egg-machines were decidedly in evidence.

Double Mating Necessary to Produce Desired Color

I say brown. Are the rich, soft, brown birds to be found today save in the yards of those breeders who practice double mating? Is it any longer possible for the average man who keeps a flock of Browns on a city lot, say "40 by 40," even think of raising some of the prospective prize winners? Is it because the variety is any the less worthy of public recognition than it was two, three or four decades ago, that we see so few of them as compared with those times? These are questions that must appeal to the breeders of the variety, and I am pleased to note that they are sitting up to take notice and that those most interested are willing to admit that the black stripe in the saddle has destroyed the rich golden brown in the plumage of the females.

Color Governed by the Male

As an evidence of this fact, I will give you an illustration. First, every intelligent breeder will admit that size is taken from the female and that color is governed by the male. Having settled this matter in our minds, let us take up the subject of the pigment or coloring matter that enters into the feathers. Suppose we take black, red and orange (or yellow) and mix these pigments as an artist would, a color printer or lithographer, until we get that soft, rich brown with which the female Browns were once adorned. We noted carefully the proportions used and made, at least, a mental memorandum of it. We will now take the same colors as previously used and will cut away twenty-five per cent. of the red and orange and in its stead we add an equal amount of black. Well, that is first what was done with the Brown Leghorn males. And inasmuch as the male controls the color, is it any wonder that the females of today are anything but brown? Shall we sacrifice the color of all the females for the purpose of gratifying the idiosyncrasy of a few who think the black stripe in the saddle of the male is more to be considered than the color of all the female birds to say nothing of injuring their popularity as a variety of a noble breed?

My Early Experience

I recall that many years ago I had the pleasure of entertaining a prominent poultry judge. I remember how enthusiastic he was over the black stripe in the saddle that was fast beginning to take hold upon the fanciers of the Browns. I remember, too, when he went out to look over my flock, his exclamation: "Oh! you are a pullet boy." Yes I was. But I didn't know as much about coloring material then as I do now, nor did I realize as fully as I do now the extent to which the male bird transmits the coloring matter to its progeny. And so, like thousands of others, I fell into the pit that someone else had dug for me, and the joy I found in the black stripe in the saddle came near being my undoing. A few years ago at an exhibition, a gentleman said: "Come and see my prize winning Brown Leghorn hen." I went the length of the hall with him to see a bird that, for color, was a "frosty-edged" nondescript. I wouldn't have carried it home for it.

Standard of 1883 vs. Standard of 1910

Before me, as I write, I have the Standard of Excellence of 1883. Here is the description for the back of the male bird: "Very dark red, approaching black on the lower part, each feather striped with golden bay." The same Standard calls for a hackle thus: "The hackles being a rich golden bay, striped with black." The present Standard calls for saddle feathers, rich brilliant red with lustrous greenish-black stripe running through the middle of each feather, same as in the hackle. I now call your attention to the difference between a rich golden-bay and a rich brilliant red as shown by the color charts in the present Standard. The tendency has not only been to supplant the "Golden Bay" in the saddle of the male birds of 1883 with black, but the color of red has been darkened. The whole tendency has been to greatly darken the plumage of the male bird. The present Standard in its description of the back of the female calls for "a light brown finely stippled with a darker brown, the lighter shade predominating. I would like to have the party, in whose fertile brain this description originated, stand right up in his place and tell us how he intends to produce it with the present Standard requirements for the male bird. Or doesn't he intend to use a Standard male bird to get it? And if not, of what earthly use is the male bird, of not only the present Standard, but every other Standard, that has called for the black stripe in the saddle, except for show purposes only and for the made bird only.

Mating For the Desired Color in Females

If you would have that beautiful brown for which the females were once noted, get a male bird that is absolutely and wholly devoid of black in the saddle and with a hackle that, instead of a black stripe, if you can find it, has a dark maroon stripe. Mate it to your female birds, and then to its own daughters and see if you don't get females that it will be a pleasure to look at. Will the breeders of Brown Leghorns go back to the 1883 Standard description for the color of the back of the male and once more give to the females the beautiful brown color that belongs to them and of which they were, doubtless, unwillingly robbed? I think they will. If not of the volition of the master minds, at least by a popular clamor for a restoration of the earlier color that made the varieties famous.

Rose Comb Brown Leghorns

Early History of the Formation of Different Strains of the Variety—Breeding for Exhibition—Improvement in Color of Females—Value as Layers—Egg Records.

W. W. Kulp

I HAVE been breeding Rose Comb Brown Leghorns since 1884; so I feel rather well acquainted with, and think very highly of them as a breed, for they have made many dollars for me.

History of the Breed as I Know It

The records I have credit Mr. T. C. McDaniels, of South Hollis, Maine, as the first breeder of Rose Comb Leghorns. He called them the "York" fowl first, then the "Rose Comb Brown." What breeds he used I do not know, but I think either he or some one later must have used the Hamburg, for many showed the Hamburg type back in the eighties. The eggs also resembled the Hamburgs'. I am almost certain some Red Cap blood was used in one strain. The Red Cap comb has caused trouble, but the Hamburg blood and the Red Cap infused into the original Leghorn have seemed to intensify the laying ability of the Rose Comb Browns.

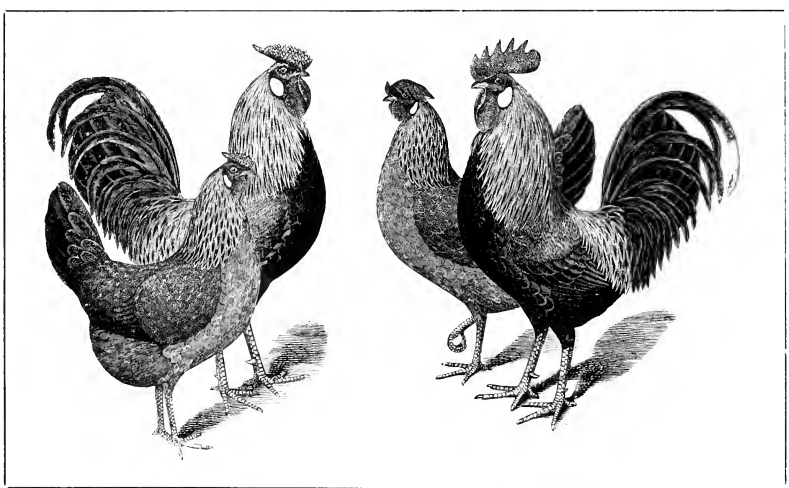
In 1884, when I began to breed them, Mr. James Forsyth, of Owego, N. Y., was the leading breeder. He bought out Mr. Crofutt. About that time Mr. H. E. Benedict of Elmira, was breeding birds that looked like this strain. They were very good in shape, light in color (the color we call "pullet breeding" now), but the females were not soft brown, rather a coarser, harsher brown. About 1888 Mr. William H. Hughes of Long Island bred a strain he brought out that produced large red males and also a strain that produced the most beautiful golden brown females. Mr. Drevenstedt pointed out my "Queen Esther" to a prominent Single Comb Brown breeder and said she was a worthy pattern for the Single Comb Browns in color. Just what Mr. Hughes used to produce it I do not know. I bought all of this strain in 1891 and these birds were the beginning of the beautifully colored females now shown.

As a Utility Breed

As bred today the Rose Comb Brown Leghorns stand as one of the very best egg utility breeds in existence. This assertion is made from a mass of testimony received from men and women who have tried all the egg breeds and are in a position to judge. Not all strains will meet this standard, but the strains bred along the latest lines will. They must have size, size of eggs, and lots of eggs.

Egg Records

The Rose Comb Browns as I have bred them have made some extra fine records. The first record I made was in 1885. I put six Rose Comb pullets in a building one year on January 5th, when the first one laid. The building was ten by eighteen feet, with no yard. I did not let them out for five months and twenty-five days, and in that time I gathered about six hundred eggs. I was young at the business then and did not feed to make a



Brown Leghorns Twenty Years Ago

The type illustrated above was popular in the ethly 90's, when Forsyth and Croffutt were breeding winning Single and Rose Comb Brown Leghorns. Reproduced froman old print in Mr. Forsyth's catalog.

record at all. I just fed them well. I know I could do much better now. During this past January I wanted some eggs and in seven days made them increase their yield nearly five hundred per cent. Later three pullets from one sitting laid 726 eggs in 365 days, or one year—an average of 242 eggs a year. Since that, or two years ago, a pullet laid seven eggs in eight days, another fourteen eggs in sixteen days, still another twenty-one eggs in twenty-two days. These records were all made in midwinter, during very cold weather. Many persons are using them for egg farms, as they lay large eggs. I have had five hens laying eggs from twenty-nine to thirty-four ounces to the dozen—too large to use for setting.

Last summer I had a pen of twenty-one Rose Comb hens running with a few pullets. In the next house were thirteen Barred Rock pullets. I found that the thirteen Rocks required almost the same amount of food the twenty-one Leghorns did, and in a ten-days' count the Leghorns laid five more than twice as many eggs as did the Rocks, and my Rocks were good layers, too. To sell eggs at the price I do I must have good layers. We see by the above test that a Leghorn egg costs less than one-half as much as a Rock egg. This was in June. In April the Rocks would have laid more. When you come down to facts it seems to be as Mr. C. E. Howell says: "A Leghorn is so profitable as a layer that you can afford to give or throw away the body." But the Leghorns are increasing in weight, and when the hens dress four pounds each the market value of the carcass will be no mean part of the Leghorn as a utility fowl.

ROSE COMB BROWN LEGHORN COCK

The above picture reproduced from a photograph of one of W. W. Kulp's noted Rose Comb Brown Leghorn males, fails to show the rich color and striping of the hackle and saddle feathers; the shape also is not successfully portrayed owing to improper posing of the specimen. The fine head points, however, are well reproduced by the camera.

One thing I feel sure of, and that is, the larger the bird, the more it will eat and the more each egg will cost. The period from egg to maturity will also be lengthened. It cannot be otherwise. I favor and try to breed so that cockerels, when developed, will weigh five pounds and the pullets three and one-half pounds each. I have several five-pound Rose Comb cockerels and four-pound pullets, and they are large, making a fine appearance. To get these weights you must pay attention to width of back. Part of the weight must be in width. I have seen many Single Comb Brown Leghorns that were tall enough to weigh five pounds, but they had only the width of a three-pound cockerel. A Leghorn pullet weighing three pounds is a fair-sized bird. If below three pounds when they are developed, I should call them small. A three-pound pullet will at two years make a four-pound hen.

I think that in the Brown Leghorn we have combined grace, beauty and usefulness to a higher degree than in any other breed. I am well aware that all breeds are beautiful when bred close to perfection. I cannot look at the fine specimens shown at New York without wanting to breed them all, but in the Browns we have so much in so little.

The Rose Comb Browns may not be quite so showy as the Single Comb Browns because of their low combs, but the advantage of the low, fleshy comb has made them popular in the northern states, although they are also bred in the south perhaps to as great an extent proportionately as in the north, considering all breeds north and south. My sales of eggs from Rose Combs have been greater than from Single Comb Browns up to the last two years. Now they are about the same. The entries of Rose Comb Browns are steadily increasing at the shows. The New York Show contains large classes each year. For some years females have been shown equal to Single Comb Browns in color, and males also, for Cyrus 1st was cut only one-half point on color at Cleveland, Ohio, and Cyrus 2nd scored 93½ after being cut one and one-half for a little gray in one wing, caused by clipping the wing, then pulling it to get it into the show.

One thing that has discouraged breeders has been the rose comb. The stock during the first ten years after being admitted to the Standard (which was in 1883, I believe) bred combs too large and too far away from the head. They would soon topple over, but that fault is pretty well remedied, although some combs still grow to be too large. I have been measuring a few combs that I think nearly right. I find a cock's comb that fits, closely to the head and seems about the right size for looks is one and seven-eighths inches wide in front, two and one-half inches long. The comb should taper to where the spike starts. The spike should be a long one, and extend straight out on a level with the top of the comb. A rose comb should be covered with small points on the top. A smooth comb is a defect. The cock having the comb here described weighs about five pounds and was behind a "blue" at New York. To reproduce it I want his mate to have a comb flat on top, seven-eighths of an inch wide and one and one half inches to spike, with a straight spike three-fourths of an inch long.

I should like to have shown a cut of this cock, but after trying five exposures, some at home and two in a photograph gallery, I gave it up. I find it very hard to get a good, true likeness of any Leghorn, and this cock is the most nervous chap I ever tried to photograph. In the pen he is quiet, but will not stand for his picture. In mating for good combs, or in fact any section, I would rather have a female first-class than the male, if I could have only one first-class, for I find the chicks follow the mother in almost seventy-five per cent. of the progeny. I think here is where good results are often lost. A first-class male is selected, but not enough attention is paid to his mate or mates.

To a beginner, if a bird had a good comb he will hardly look farther, but after some years he will learn there are other important points. Color is usually considered the most important part of a Brown Leghorn, and I think about the hottest place a judge gets into at a show is where a bird has extra fine color but is not so good in shape, while another has extra fine shape and fair color. Each thinks he has the best.

The shape of the body back of the legs is an important point to the eye. The fluff should extend beyond the legs, giving us a balanced and symmetrical body. I would like to show it in its beauty in living models; also the style where the body seems to come to an end right back of the legs. If you have no male with this shape—the long fluff—but have the upstanding kind, mate him to hens having a full saddle rising to the tail. I at one time mated a high tailed cockerel to such a hen and every male had the shape of the hen and but one pullet had the cockerel's shape. One had the hen's, and the others were in between the two. In color this sire striped dark. The dam was medium dark only. The edge of the cockerel's hackle and saddle was light red. All the cockerels were only medium to very light, with not much striping, while all the pullets had a dark ground color, penciled rather light—as light as the mother—but had two pencilings where she had one. This mating produced show pullets while I wanted show cockerels. She had the shape and comb and was medium dark.

Rose Comb. Single Comb.

BROWN LEGHORN EGGS

The two dozen eggs illustrated above were laid by Rose Comb and Single Comb Brown Leghorn hens bred and owned by W. W. Kulp, Pottstown, Pa. Each dozen weighs 22 ounces, which is eight ounces per dozen above the average weight of market eggs.

Of late years the great point to be gained seems to be black stripes in hackle and saddle. The black edged with a bright, rich red is beautiful, no doubt, and should first be bred in the neck to perfection. What I mean is, do not sacrifice hackle for saddle, for you can see the hackle, both the black and golden red, one hundred feet away, while the black of the back can only be seen right by handling. The neck being arched prevents the feathers from lapping enough to cover the black, while the Standard back makes a concave sweep and this laps the feathers until only the red shows, making practically a solid red saddle except when handled or viewed very close.

The proper mate to use to a dark, metallic striped hackle and saddle is a female having solid or almost black stripe in neck. Edge color should go to the end of the feather or you will have a smutty hackle on your cockerels. I should prefer a plain saddle with a beautifully edged hackle, the red color extending to and around the end of each feather on the cape to a perfect saddle, with the hackle only red on the upper part, the cape or lower part being black, both the edge and center. I would advise this: Never give up a good hackle and fair saddle for a fair hackle and good saddle. I have seen it done often in the Single Comb Browns, but I was also glad to see our best judges favor the best hackle in preference to the best saddle.

The pullets from a dark cockerel, and his mate to reproduce him, are always bad in breast color. It is impossible to hold a salmon breast and produce the black stripe in saddles. In Single Comb Browns, lots of pullets will get breasts like their backs, and I know it will produce the same in Rose Comb Browns. But if the Standard and the buyers demand a striped saddle we will have to put up with dark females.

White is a great source of trouble between the buyer and the seller of eggs for hatching. Very few stop to consider that white is simply the absence of color. It can be and is hereditary, but it can and is just as often produced by other causes and blamed by the buyer to the seller's stock. The color of the feathers is deposited by the blood. If the chick is kept on limited range, or ill fed, it will fail to make the color nearly as good as if fed properly. If a feather is bruised or fails to break the skin at the proper time, it will come with a white tip. This can be easily proved by injuring a stub just coming through, especially the stub of a flight feather.

I have been doing a little measuring to give definite information in regard to length of legs. A Leghorn should have a length of leg to correspond to the length of its neck and tail. If short in legs it is out of proportion. I find five-pound cockerels should have five and one-half to six inches of daylight from the bottom of the feathers to the ground right between the legs. One that is six and one-half inches is fully as high as it should be. You will find by taking the bird in your hand and placing a foot rule against the breast-bone down along the leg, stretching it to its full length, that a bird measuring ten and one-half inches is tall on his legs. I have them that go to eleven and one-half and I consider that plenty tall enough.

The Standard colored Brown Leghorn female in perfection is a model in both shape and color. In color she should be brown all over, except the neck. It should be a golden color, with a black stripe down the center of each feather. I do not remember that I ever saw one of that kind with a brown back. If the hackle is black centered, the ground color of the feathers is black also, and you have black, metallic black, and brown for your color; while if the hackle has some penciling in the cen-

ters you can have the back a dull black, called brown, and you want it penciled with those small, golden-brown dots, so small and the dots so close together that if you step back six to ten feet, her back and wings will look like a soft, velvety brown. You cannot see a particle of black, and here you have the true Brown Leghorn and the shade that is the most beautiful and the shade that wins. Such a color of back and wings has been produced in the Rose Comb Browns, practically free from shafting—that is, free from a shaft that is colored a lighter shade than the ground of the feather.

The male that should be mated to such a female will be of the same shape as the male described, with the comb the same. The lobes of all breeders should be clear white, smooth and oval in shape and fit flat to the head. The face should be free from white. The color of the neck of the male should be golden with black center on the cape and as far in and up the neck as you can get it. Wings should be in color a dull brown, the duller they are the less brick there will be in his female get. The saddle on top should be as free from black centers as possible. The centers should be brown. The edge should shade lighter down the sides, have a golden cast dark undercolor for all breeders. Legs should be yellow and of proper length. Tail carried low and full.

With such a mating you are sure to reproduce the best females. For one mating take such a male, or one a little darker, and mate him with light show females, part of the pen to be dark females, and you will get dark males from your dark females.

Today I know there are hundreds breeding Rose Comb Browns who keep them just for eggs and beauty. They select them because of the non-freezing comb. I would say: "Come to the show with your stock." It will pay in pleasure and money. Breed the best you can and keep at it.

I will add a word about yarding. I know that hundreds give up Leghorns because they cannot keep them in a common yard. I have only two pens with eight-foot fences; the rest are of four-foot wire. But I clip short every bird in them, leaving a feather on one side to preserve the shape. It does not spoil their looks.

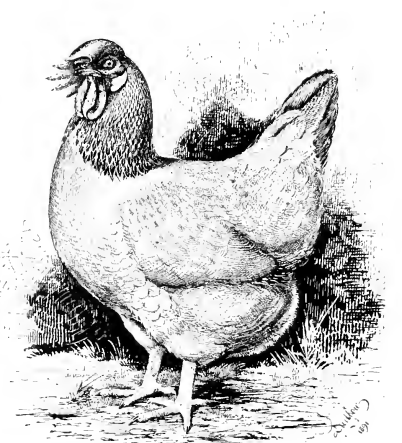
What Breeders Say

Progress Made in Color and Shape in the Past Two Decades—Virtue and Faults of the Variety Today—How The Revised Standard Will Benefit Brown Leghorns in the Future.

THAT a well-bred modern Brown Leghorn, single or rose comb, is the most beautiful variety in color and markings of the Leghorn family, is generally admitted by close students of color. The lustrous green-ish black of the hackle and saddle stripings, sickles, and tail coverts; and the brilliancy of the red color of the neck, back and wingbows of a Standard exhibition male, are strikingly beautiful, rarely equaled and never surpassed by any other breed or variety having similar color markings. The soft brown, finely stippled feathers of the back, tail coverts and wings of the female exhibit a color scheme of rare beauty, characteristic of the Brown Leghorn only.

It has taken years of patient labor and close study in selecting proper matings, to produce and perfect the color markings of Brown Leghorns, many breeders giving up the task, believing it either too slow and unprofitable or contrary to the best interests of the variety. They looked upon the Brown Leghorns as a market fowl principally, so considered the egg producing quality as of paramount importance; also contending that striped hackles and saddles were foreign to the breed and tending to make double matings compulsory in order to produce exhibition males and females, consequently reducing the number of saleable specimens. Their creed was single matings with plenty of chickens to sell, but the real fancier and breeder of Brown Leghorns had higher ideals. He wanted the bird beautiful, so proceeded to produce it, regardless of the clamor and criticisms of poultry writers and breeders infested with the utility bug. The work of such noted breeders of Brown Leghorns as James Forsyth, C. E. Howell, W. Theo. Wittman, the late Dr. H. W. Dorsey, James Qurollo, W. W. Kulp, Geo. C. Morris, Geo. H. Burgott, W. F. Brace, F. W. Weeks, H. E. Benedict, J. F. Carter, Tenny & Harrington, William Ellery Bright, L. Brown, D. M. Owen, W. Henderson and Arthur C. Smith of the past and present, and the more recent achievements of Miss Pitchlyn, W. R. Bowers, Mrs. Forbes, J. H. Henderson, Charles O. Miers, W. H. Wiebke, T. H. Woods, W. H. Hearsfield and other good fanciers have produced magnificent results. Most of these breeders stuck loyally to their favorites, and to such good fanciers, the "dainty Browns" owe their present high Standard of excellence in both color markings and type.

In order to get the views of prominent and successful breeders of Brown Leghorns, on the progress made in the past two decades, and of the virtues and faults of



ENGLISH TYPE OF BROWN LEGHORN HEN
Winner of Challenge Cup for Best Leghorn, Crystal Palace Show, 1890

this variety today, we sent a list of questions to leading fanciers in the East and West. We received answers to this symposium from:

Geo. H. Burgott, New York	D. M. Owen, Tennessee.
W. W. Kulp, Pennsylvania.	H. C. Short, Kansas.
Wm. F. Brace, New York.	T. H. Woods, Missouri.
Charles C. Miers, Penna.	Loring Brown, Georgia.
W. W. Carmen, New York.	Florence Forbes, Alabama.
A. C. Smith, Massachusetts.	J. H. Henderson, Tennessee.
W. H. Wiebke, Indiana.	L. P. Harris, Nebraska.
W. H. Warnock, Illinois.	

The questions and answers follow:

1. How does the Brown Leghorn of today compare in color and shape with the Brown Leghorn of ten or more years ago?

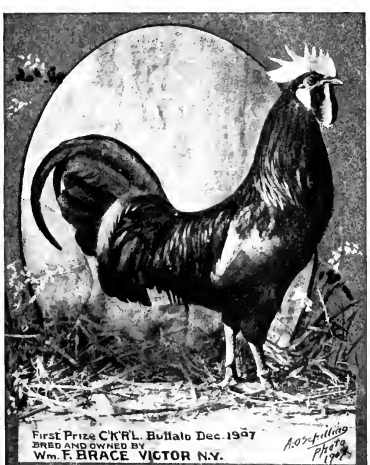
The Brown Leghorn of today is decidedly a more beautiful bird than was produced under the Standard prior to its revision at Boston, and an improvement on the specimen of ten years ago.—George H. Burgott.

It is a little over ten years since the very fine, clear, golden Browns have been bred and shown, and in that time I think but little change has been made, for some very fine females have been bred.—W. W. Kulp.

The shape of both male and female perhaps is somewhat better. The color of male is not as good, but that of female is greatly improved.—William F. Brace.

I believe the males have improved both in shape and in color. The females have improved in color of hackle, and there are more good females, more people are breeding good females.—yet, the back and body color has not improved.—Charles C. Miers.

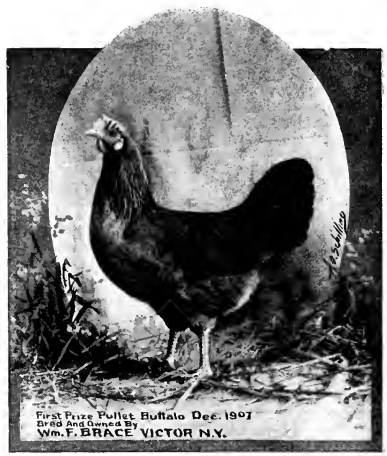
Some breeders are getting better color, especially in females. The males in R. C. Browns are very much



S. C. BROWN LEGHORN COCKEREL

better. Shape as a whole is better, but with a tendency to too long bodies and not curve enough in back, and tail lower than should be.—W. W. Carmen.

Improved in shape, size, color and markings. Males and females more even in color. Females, less shafting and brick in best specimens.—A. C. Smith.



S. C. BROWN LEGHORN PULLET

The males are darker in color and the females lighter. Size has also increased some.—W. H. Wiebke.

The color of males is better than ten years ago. Color of females is not so good as some few of the best specimens of ten years ago.—D. M. Owen.

The females are much lighter on backs and wings, the males darker in hackle and saddle, making it impossible to produce winning males and females from the same mating, thereby having unsatisfied customers, especially if beginners in the poultry business, and a very uneven flock in color, both males and females being dark and light.—H. C. Short.

Males have better combs, more perfect in stripe, especially in back, lower tail shape. Females are not so dark, are finer stippled, with but very little shaft and brick; in fact they are very much improved.—T. H. Woods.

No, by no means. It seems impossible to get any good, true Leghorns any more, so I have given them up this year for the Whites, after breeding Browns continually for thirty-eight years.—Loring Brown.

Most of the judges prefer a lighter shade of brown.—Florence Forbes.

The prize winning male of today is very much darker, and most of our leading judges seem to favor the male with the extreme black striping in hackle and saddle, thereby encouraging the breeder to produce a male of much darker shade of color throughout.—J. H. Henderson.

The cocks are much darker red in neck and saddle; the females much lighter in back and wings and more evenly penciled.—L. P. Harris.

A better colored female, but little improvement in male aside from better stripe in saddle. The males of today have much more purple in plumage, the craze for heavy striping in hackle and saddle being the cause.—W. G. Warnock.

2. Has not the present Standard's description of the color of males lessened the brightness of surface color and caused the females bred from such males to lose in brownish surface color, thereby making extreme double matings more necessary than in the past?

It will be impossible to breed a beautiful bird even under the last revision—from a single mating. I am unable to see a cause for dropping the single mating

system, when I see the best breeders of Hamburgs and Polish on this continent, using this system.—George H. Burgott.

I have always favored the golden browns, as they are the most beautiful; and I have always noticed that persons who are not interested will select those as the finest color, regardless of the Standard. We who breed them know they are much harder to breed than the darker colored ones. It is not nearly so hard to breed a dark, clear-winged pullet, as it is to breed a golden-colored, clear-winged pullet; and when they are as finely stippled as they well could be, the height of beauty is reached so far as color goes in the female.—W. W. Kulp.

The present Standard has lessened the brilliancy of the males, causing smuttiness in saddle and hackles, and purple in shade, instead of the beetle green we used to find. The females are very much too dark—in fact, they are more like the Partridge Cochin in markings. I think it would be impossible to make single matings and get the beautiful color we have on females, but by lightening the shade of males we would get more brilliant color and less of the purple, which is now so objectionable.—William F. Brace.

Those extremely dark matings are not at all necessary and are of no account, always breeding too much smut and a lack of red on wings. We notice some judges are overlooking this bad defect.—Charles O. Miers.

Ten or fifteen years ago I had lots of males that were very glossy, giving a beautiful effect; now not over one in twenty shows this gloss, if they are of a deep rich red. The cockerel breeding females of today are anything but brown. The deep red bird is very handsome in the hand, or a few feet away, but the brighter colored bird takes the eye in the yard.—W. W. Carmen.

The female that is desired now, and that has been desired for twenty and more years back, produces a male so colorless and characterless that it is a waste of time and mental power to think of the single mating proposition.—A. C. Smith.

Yes.—W. H. Wiebke.

Males of present Standard description throw pullets entirely too dark in color.—D. M. Owen.

It has caused the color in females to win in males a Dark Brahma female color. And can any breeder of the Brown Leghorn realize the contrast in color to a winning female? Is it any wonder for a beginner ordering a trio for producing exhibition males, to be amazed at the contrast in the color of females to exhibition females?

To produce birds for the present Standard it requires two matings to produce birds of the highest type. The female-cockerel matings result in birds too dark for show purposes, and the cockerel-pullet matings result in birds too light; double matings are absolutely necessary. —T. H. Woods.

It certainly has.—Loring Brown.

The present Standard makes it impossible to breed Single Brown Leghorns unless you have a double mating. —Florence Forbes.

Yes. In our great desire to produce a male with the extreme dark striping in hackle and saddle we have lost much of the rich brilliant red and have introduced into the general color very much more of the smut and purple, causing the females bred from such males to lose in brownish surface color—thereby making double matings imperative.—J. H. Henderson.

The present Standard makes it impossible to breed both good exhibition males and females from same mating. Still I admire the colors of each more as they are now than as they were ten or more years ago.—L. P. Harris.

Yes, females bred from present day males have little resemblance to Brown Leghorns, many of them being so dark as to be unfit for breeding and are salable only for layers.—W. G. Warnock.

3. Would not a lighter or more brilliant red in hackle and saddle and a slate instead of a black or dark slate undercolor prove conducive to larger percentages of good females and make single matings possible?

I believe brilliant red is right, and also that too much weight has been put upon dark undercolor, causing so much omission of stripe at ends of hackle. Single matings would be impossible, for we should then lose the beauty of the female.—George H. Burgott.

I have no objection to having the color vary from light to darker, as that has always been done and will always be done, as the darker ones may be the best, all things considered. But I think it is making the road a bit easier so far as exhibition Brown females are concerned.—W. W. Kulp.

A lighter shade in males would be an improvement, and it could be done by breeding a Standard colored male, with coarse markings. The undercolor is not of so much importance as the surface color, and would have a tendency to brighten the shade and still retain the beautiful striping, and the greenish shade of black would result, instead of purple. It would make them as we used to find them. The darker shade and Partridge Cochin breasts were used to obtain an even shade in hackle, which was difficult to get; even by this method I think it impossible to get the female color as it is today. Let the Standard call for a lighter shade in males.—William F. Brace.

S. C. BROWN LEGHORN COCKEREL

We do not believe that either good females or good males can be produced from a single mating, unless we accept the present pullet-bred cockerel as good, and change the present Standard accordingly.—Charles O. Miers.

If seal brown were Standard for females and a female were mated with such a male, a single mating might be possible.—W. W. Carmen.

Single matings are not a possibility until a straw-colored male will be condoned.—A. C. Smith.

I doubt if good males and females can be produced from single matings. I never could. The strong striping in saddle of male would always give poor striping in females.—W. H. Wiebke.

The male to throw fine-colored females should have medium red hackle shading to lemon at base; saddle, orange red; undercolor, slate.—D. M. Owen.

A lighter shade of cherry red without the black stripe

more lacing of feathers in hackle and saddle of males, and a little more red or brownish surface color in females on back and wings, would no doubt prove conducive to a larger percentage of good females and make single matings possible for both exhibition males and females, in my judgment; as it should be from mature either to have males or females lighter or darker in color, as I. K. Felch has said.—H. C. Short.

It might prove to be a very good mating, but I think the double matings could produce birds of finer color; of course, in double matings you do not want to go to extremes.—T. H. Woods.

It would, just as it did twenty or twenty-five years ago when plenty of 95 point birds under Pierce, George O. Brown and I. K. Felch were produced from single matings, and ninety per cent. all good. They were a joy and a beauty to anyone, and were then the most popular and profitable breed we had in the South.—Loring Brown.

Yes.—Florence Forbes.

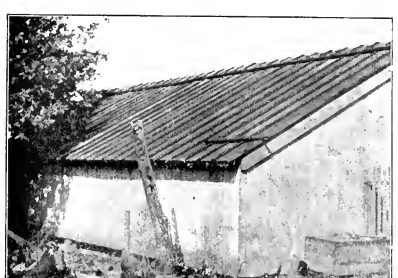
I do not think, under the present Standard requirements, that we shall ever be able to produce a satisfactory exhibition specimen male or female from the single mating system.—J. H. Henderson.

No; it would not only require a lighter hackle and lighter undercolor for males, but a darker shade of brown in females' backs and wings, and darker neck lacings.—L. F. Harris.

Yes, if persisted in for a number of years, it would take a long time to eradicate the double mating tendency, but would result in greater uniformity in the flock—something that the Standard makers do not seem to want.—W. G. Warnock.

4. In the revised Standard the color of the back and wing-bows of females is described as follows: "Light brown, finely stippled with a darker brown, the lighter shade predominating. More importance is attached to fineness of stippling and evenness of color and freedom from shafting, than to the particular shade of color, but it is important that the effect produced be that of a soft even brown that is not suggestive of gray, as one extreme is to be avoided as much as the other." Will not this have a tendency to produce more uniformity in the color of exhibition females and also result in more uniform awards by judges?

The back and wing should be decidedly brown, with no tendency to gray. The end of the feather being slightly laced is the cause of a gray appearance. Under the new revision the judging should be, and will be, more uniform.—George H. Burgott.



Rose-Comb Brown Leghorns in the Yards of W. W. Kulp Pottstown, Pa.

S. C. BROWN LEGHORN COCKEREL

In Brown males I think the top was reached about ten years ago. Those who see the best show birds year after year will say that the quality will not run even year after year. Some years the matings will seem to fail and the very good ones are not there.—W. W. Kulp.

The present or new Standard covers the ground as far as color is concerned, and it would be difficult to improve on the wording; and it will surely result in more uniform judging.—William F. Brace.

We believe the light brown females to be more attractive—though harder to produce—to have a nicer finish, and that the finer stippling is softer.—Charles O. Miers.

Unless the Standard states the exact shades I cannot see how a change can bring uniformity in judging or in color of females, except in color of neck hackle. The change from rich orange to golden is a good one.—W. W. Carmen.

We hope so, or at least hope that the gray-colored females will not be considered. We think the section a good one, for it gives the breeders a chance to breed their preference in shades, within certain limits.—A. C. Smith.

I think it will; it certainly ought to.—W. H. Wiebke.

This is the best description of female we have yet had and I feel sure it will prove of much benefit to both breeder and judge, and result in more uniformity in breeding and judging.—D. M. Owen.

I think this would have the tendency to produce more uniformity in the color of exhibition females; as it is now, some judges prefer a soft, even brown that is suggestive of gray, while others prefer one that is suggestive of a darker brown or red. The darker brown, I find in breeding, is more free from shafting and generally a better color in hackle and breast. The soft even brown is suggestive of gray and red or brick color in wings. Cannot answer second point of question. That's to be tried.—H. C. Short.

I think this will make it much better for judges, as the color is to be brown, not gray or red, and it seems that any one could select the best birds, also the breeders, as fineness of stippling and freedom from shaft and brick will be the objects.—T. H. Woods.

Give us the old time color and let there be some shafting and red in wing-bows, and get back to the good old time color and away from the B. B. Reds. Then we will have a much smaller percentage of culls and three times as many eggs and fewer persistent setters.—Loring Brown.

Too much importance is placed on back of female. I prefer darker shade in back, with a good hackle. With the light females you do not get a perfect hackle or a rich-colored breast.—Florence Forbes.

I do not anticipate any great reform or change toward more uniformity in color and judging of exhibition females until we can get our judges educated in the same schools on what constitutes Standard color. I am of the opinion that we must have and furnish our judges, for comparison while judging, a visible ideal color guide, specimens of real feathers taken from a live female of the most nearly perfect Standard color type, to assist them in the right interpretation of our present word-picture Standard.—J. H. Henderson.

I should think it would; still at the same time it will not help to correct the evil of double-mating.—L. P. Harris.

The above change and description meets my ideas exactly. I do not think stippling or shade of color alone should decide an award; excellence should win, freedom from shafting being considered the greater defect.—W. G. Warnock.

5. Will the revised American Standard of Perfection prove of material benefit to the Brown Leghorn, in producing a greater percentage of exhibition males and females?

I believe it will, but they cannot be bred from a single mating unless you should adopt Partridge Cochin color—and then not, as the best of our Partridge Cochin breeders use the double matings to a certain extent.—George H. Burgott.

It is likely that in Single Comb Browns the best bird ever shown was shown last year. He, or the same yards, may not produce as well this year, but in a year or two will do it again or better.—W. W. Kulp.

The proposed or revised Standard will improve both males and females, but there is a tendency to too low tails, especially on females, giving them the appearance of having what we call "pinch tails."—William F. Brace.

We are satisfied with the Standard, but some judges need a few lessons on color, or should occasionally visit some one who breeds good Brown Leghorns.—Charles O. Miers.

I do not know.—W. W. Carmen.

Yes; by giving a better understanding of what is desirable in female color.—A. C. Smith.

Do not know, but hope so.—W. H. Wiebke.

I think it will. The description of female is very good. The description of male could be improved some.—D. M. Owen.

I hope so, should the Browns once again be ever placed in the foremost rank of poultrydom, as they have been and should be. The making of extreme double matings necessary to produce exhibition males and females lessens their popularity or any other breed, for that matter, in my judgment.—H. C. Short.

I think the revised Standard will help the Brown Leghorns, and that they will be much improved in the next few years, as there has been a great improvement in the past four years.—Tom H. Woods.

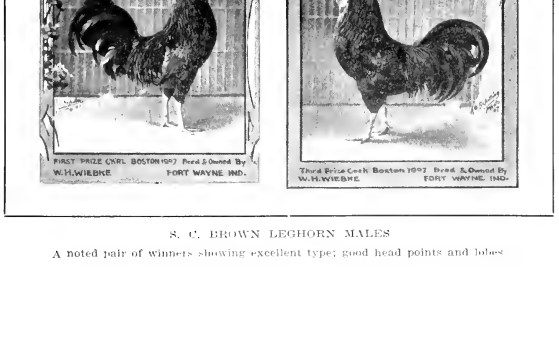
No, not like it now is, but will kill the breed, especially to the novice, who is the very one we must depend upon for most of our future business. There are very few, if any, good old time Brown Leghorns in the South like we used to have, which always were the leading classes at our Southern shows fifteen or twenty-five years ago. They sold like hot cakes and laid eggs by the bushel, and a sitter was always killed and considered not pure. Change the Standard back, with few exceptions, to read as it did when B. N. Pierce and Thos. Pottage produced the hardiest birds ever bred, that were real Brown Leghorns, and we will some day have them back—good and true money makers, with size, fine large combs, and workers to stay.—Loring Brown.

No.—Florence Forbes.

Very much depends upon the interpretation. Our Standard will be made better, our breeding more satisfactory, when our judges learn the same lesson—Standard color.—J. H. Henderson.

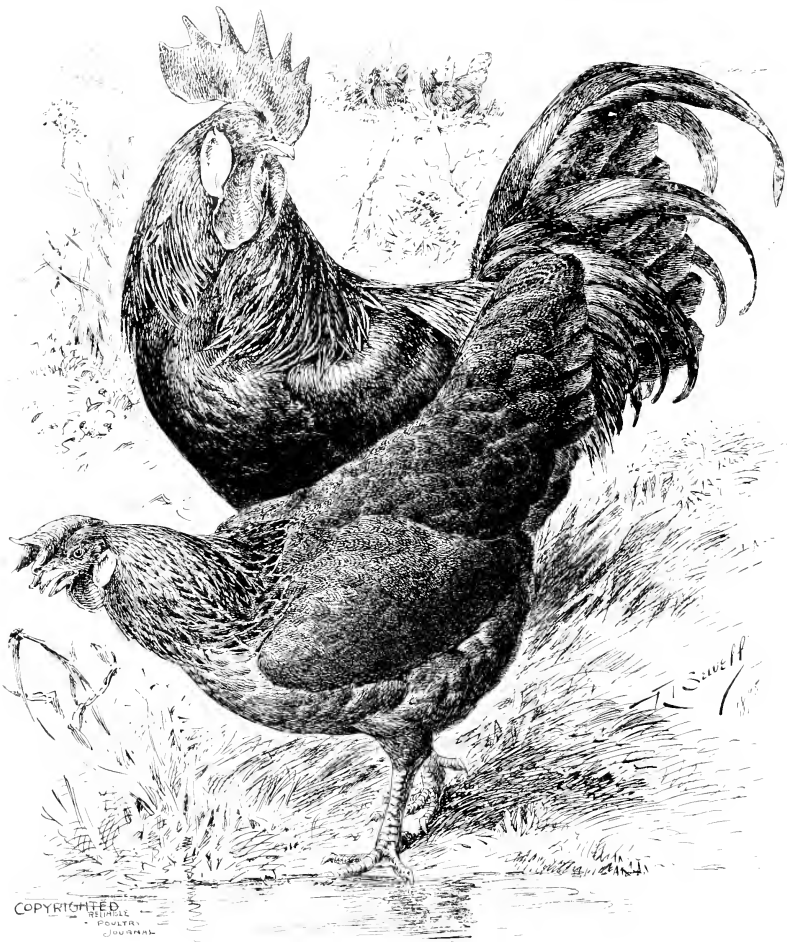
No.—L. P. Harris.

I hope so, but I doubt it. About the time breeders get to producing a nice uniform flock some few will ask for a change and, judging the future by the past, they will get it. Standard tinkering has driven the Brown Leghorn from many show rooms and has made the production of a 95-point specimen almost an impossibility, and has made one-half of our flock culls, as judged by Standard requirements.—W. H. Warnock.

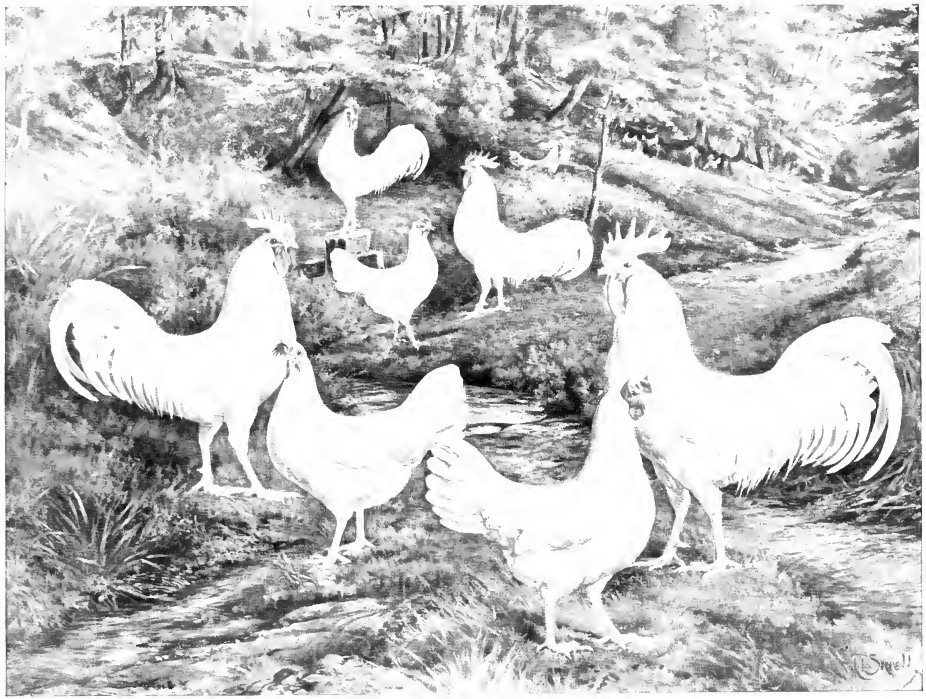

FIRST PRIZE COCK BOSTON 1897 Bred & Owned By
W.H.WIEBKE FORT WAYNE IND.
Third Prize Cock Boston 1897 Bred & Owned By
W.H.WIEBKE FORT WAYNE IND.

S. C. BROWN LEGHORN MALES

A noted pair of winners showing excellent type; good head points and lobes



Single Comb Brown Leghorns, 1895.



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MANZ COLORTYPES CHICAGO

SINGLE COMB WHITE LEGHORNS

From a painting by Franklane L. Sewell, of prize winners at the greatest New York and Boston Poultry Shows.
Bred, owned and exhibited by D. W. Young, Monroe, N. Y.

CHAPTER IV

White Leghorns

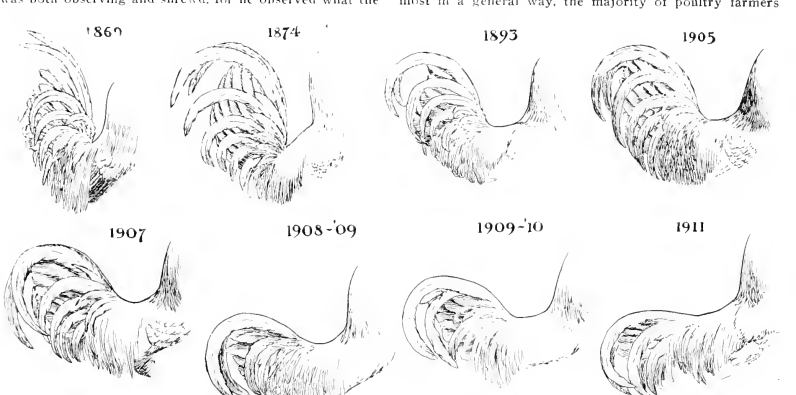
Changes in Shape That Have Transformed the Modern White Leghorn Into a Type Distinct From the Original. History of Noted Fashionable Strains. Breeders, Exhibitors, Judges and Artists Responsible For the Low Carriage Tail Fad. Standard Requirements of Forty-five Degrees For Carriage of Tail Often Ignored in Placing Awards. Illustrations Showing the Changes in Carriage of Tail in the Past Forty Years.

J. H. Drevenstedt

IT was C. H. Wyckoff, who, fifteen or more years ago coined the phrase, "America's business hen," and applied it to his strain of White Leghorns. Being a shrewd and persistent advertiser in the poultry and farm journals, the phrase successfully appealed to the buying poultry patrons of the latter. It proved a happy choice for C. H. Wyckoff and the White Leghorns as well. Mr. Wyckoff prior to his embarking in the Leghorn business was a successful farmer in Western New York located not many miles from Knapp Bros., who in the early 90's were the kings of the White Leghorn fancy. The Knapps were successful in the showroom, meeting and beating all comers for a number of years. They bred and raised beautiful White Leghorns for exhibition and also kept a large flock for laying purposes, selling the eggs at an advance over market quotations to first-class hotels in New York.

White Leghorn Eggs For the New York Market

The demand for Leghorn eggs in the metropolis of America was growing greater than the supply, which led observing poultry farmers to look around and see what breed would meet the requirements best. Mr. Wyckoff was both observing and shrewd, for he observed what the Knapps had accomplished with White Leghorns and he wisely planned to build up a strain of the latter for laying purposes only, and advertised the fact broadcast. To this the boom of the Leghorns owes much, not only in a commercial sense, but from a fancier's standpoint as well. Mr. Wyckoff's "America's business hen" proved a winner ever since, as the hundreds of large and small commercial Leghorn farms were successfully operated in New Jersey, New York, and the Pacific Coast, with a gradually broadening out to other sections of the country, practical poultry raisers of the West and South taking to Leghorns as a duck takes to water. The chalk white eggs, so popular in New York City, are finding new and growing demands by consumers in other cities. "White Leghorn Eggs" is a trademark of the highest value, one that will never be superseded by any other. It is the fixed standard of value in the best markets. It makes no difference whether the eggs are laid by White, Brown, Buff, Black, Pyle or Duckwing Leghorns, Minorcas, Andalusians, Houdans and Anconas as long as the shells are white. But the trade mark "White Leghorn Eggs" helped the variety bearing the popular name White Leghorn most in a general way, the majority of poultry farmers



The evolution of the back and tail outlines of the Leghorn males from 1869 to 1911 is clearly illustrated in the above chart. The sketches are made from illustrations of first prize winners in the years noted, except those of 1869 and 1905, the former being taken from an old print and the latter from the 1905 Standard ideal. The remainder were taken from Mr. Sewell's illustrations of New York winning cockerels. The extreme upright carriage of the tail in the 1869 sketch in comparison with the standard ideal of 1905 seems just as ridiculous as the abnormal low carriage of the tail in the 1911 sketch.

believed White Leghorn eggs must be laid by White Leghorn hens. This helped the boom of the White Leghorns greatly, at the same time increasing the interest in the other varieties, so that the wonderful popularity of Whites is not without its beneficial effects on the Buffs and Browns, in the utilitarian way.

The boom of the Leghorn as a business hen, is largely responsible for the popularity of Leghorns as an exhibition fowl today.

Great Changes in Shape of Leghorns

The modern exhibition White Leghorn of today is as different from the high-tailed, short-bodied Leghorn of thirty years ago as the exhibition Game is from the Pit Game. The refinement in type improved the utilitarian qualities, the longer bodied and deeper keeled bird of the present time, being the better egg producer.

The changes in shape of Leghorns are admirably illustrated by Franklane L. Sewell, in his article on "The Evolution of Leghorn Type," beginning on page 23 of this book. Leghorn types from the crude specimens bred in the early seventies to the modern graceful and sprightly Leghorn are clearly outlined and intelligently commented upon by Mr. Sewell, affording an interesting and instructive history of shape.

Fig. 1—First Prize White Leghorn Cockerel, at New York, 1890.

Fashionable Type of White Leghorns

Fashionable types in White Leghorns were less in evidence thirty years ago than ten years later, when the real refining process of the crude material at hand began. The birds shown in the early nineties by Knapp Bros. were excellent in head points, color and type albeit the carriage of tail was higher than is considered good form today. In the illustration (Fig. 1) we have the type of male bird shown by Knapp Bros. The comb is a little larger, the back shorter and the tail carried more upright than in winning specimens of today, but otherwise the graceful sprightly carriage is the same. Of the winning females, many would stand a very fair chance of winning at our leading shows today. In our own experience in breeding White Leghorns from 1885 to 1889, we found little difficulty in producing a large percentage of good females both in color and type, but in males, too many were "inclined upward" in tails and the surface color was too often tinged with brassiness. Whether the modern art of bleaching had not been discovered at this time, or whether we did not select the silvery white plumaged and quilled males and female breeders, carefully enough, the fact remains, we, as well as many other breeders of White Leghorns, had plenty of males that would not pass muster as truly or untruly white birds at a modern poultry show.

In order to convey to our readers a fairly accurate idea of the accepted White Leghorn type from 1885 to 1890, we reprint here the illustrations (Fig. 2 and Fig. 3), made by J. Henry Lee, which appeared in the book "Philosophy of Judging Fowls" by Felch, Babcock and Lee, 1889.

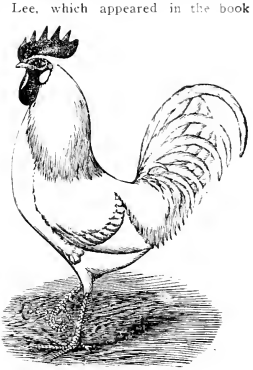


Fig. 2—White Leghorn Male Type, 1885.

The prevailing fault of Leghorns at that time is clearly illustrated in the carriage of the tail in both male and female (Figs. 2 and 3), the tail of the male being close to what is called a "squirrel tail," a disqualification under the present Standard, but not in the earlier Standards, which no doubt accounted for the large numbers of squirrel tailed Leghorns bred and exhibited thirty years ago. It was a hereditary defect which took many years of careful selection to overcome. In the Standard of Perfection, 1888, the tail of the White Leghorn male was described as follows: "Large, full and carried upright;" in the female, "long, full and carried upright." That was what Leghorn breeders were asked to breed to, but many good fanciers did not like this Standard ideal of tail and the gradual change in the carriage of the tail started soon afterward, the fashion decreeing a lower angle at which the tail was to be carried and with it came the longer back, deeper body and longer shank This fashion became more general after 1893 when the new types of White Leghorns began to appear at the Madison Square Garden, New York, one of which was the Whiting Type, so-called because of the large size, length of back and depth of body of the specimens exhibited by Whiting Farm of Holyoke, Mass.

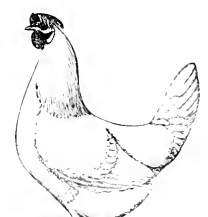


Fig. 3—White Leghorn Female Type, 1885.

The Whiting Leghorns

W. F. Whiting, who originated this new race of White Leghorns, was a genuine fancier, and one of the most intelligent breeders of Leghorns in New England. It was purely a fancy with Mr. Whiting, commercial reward being no object. These birds were the sensation in the Leghorn alley at New York in 1896, 1897 and 1898, sweeping all before them. They were in a class by themselves and dazzled the judges as well as the exhibitors by

their uniform excellence in type and color, albeit, some good judges declared that they were too large and coarse to be characteristic of the true Leghorn type. In our report of the White Leghorn classes at the New York Show of February 1 to 5, 1898, which appeared in the "American Fancier" the following week we remarked: "White Leghorns were exceedingly well represented, the quality being very superior, as a rule. Whiting Farm made the greatest record ever known at a New York Show, winning every first prize in very strong competition. Mr. Cornell's birds being decidedly first-class, while the exhibit of Plainfield Poultry Farm was highly meritorious. The difference in type existing between Whiting Farm Leghorns and others has been magnified into something remarkable. Such is not the case." Several years afterward when Ezra Cornell, E. G. Wyckoff and others began to take up the work after Mr. Whiting retired from the field, a new and shining light in the White Leghorn fancy appeared on the scene and made a great record from his first exhibit at New York to the present day. This was D. W. Young of Monroe, New York. His strain was carefully selected from the flock of White Leghorns bred for many years by his father, on the Young homestead at Highlands. Mr. Young's own story of how he built up his strain and how he produced the fashionable and popular type of White Leghorn of today will be found in this chapter. It will prove instructive and valuable reading for all breeders of White Leghorns.

Modern Exhibition Leghorns

The modern exhibition Leghorn dates its beginning in 1893. The types of Mr. Cornell's famous cockerel "Prince Purity," and his mate, a pullet, both winners of first prizes at New York in 1893, were accepted by judges and breeders at that time as the most advanced and desirable. We reproduce here a sketch made for Mr. Cornell by Franklane L. Sewell. White Leghorns were the largest in size of all the Leghorn family. They were at the same time graceful birds, full of curves, and as trim and sprightly as a Game cock. Their tails were well furnished and spread. Then came an era when small bird with white plumage and pinched tails won. About five years ago a change for the better was made, and large birds with all the characteristics of the old Leghorn were demanded. Mr. Whiting was shrewd enough to see the point at once and started in to breed for the up to date bird. So did Knapp Bros., Ezra Cornell and others. The result is we have a most beautiful White Leghorn today, that stands well up on its legs, shows the graceful curve of the hocks instead of losing it in the overhanging body and fluff. Of course, there is overdoing the size and leading the breed toward coarseness, but judges will soon realize this danger and act accordingly. White Leghorns made rapid progress after that with the late Ezra Cornell's birds setting the fashion.

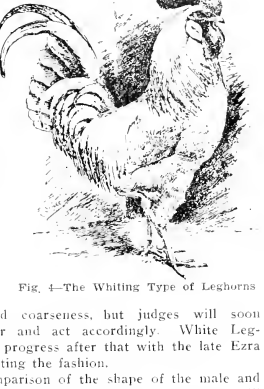


Fig. 4—The Whiting Type of Leghorns

A careful comparison of the shape of the male and female with the shape of winners at our recent shows will prove the Cornell pair (Fig. 5) to be of the same type as first-class specimens of today, albeit the ultra fashionable droop of the tail in the male is not as pronounced. But measured by the present illustrated Standard ideal, the cockerel carries his tail only a trifle higher than at the required angle of 45 degrees. In length of back "Prince Purity" exceeds the Standard ideal but not the twentieth century ideal of the White Leghorn breeders. Length of back and tail is the latter's hobby, which has become the fashion. But like all new fashions, extremes are sure to follow, so we find White Leghorn males with immensely long backs and tails, the latter drooping in the characteristic Sumatra Game style, the greater and lesser sickles losing in breadth and firmness of web of feathers, becoming as soft as tail coverts, but reaching out in length far beyond the main tail feathers dropping instead of curving over the top of the tail. While this feature may be desirable in the Sumatra and the Phoenix fowl, it is not a Leghorn characteristic. Leghorns are hard and close feathered birds, any approach to loose feathering in body and fluff and in sickle feathers creating a suspicion that foreign blood has been used to obtain the desired length of tail. As the Silver Duckwing Leghorn had considerable of the Shin-awarataos or Japanese Phoenix blood in its original make-up, long flowing tails were not uncommon in the males of that variety and with both male and

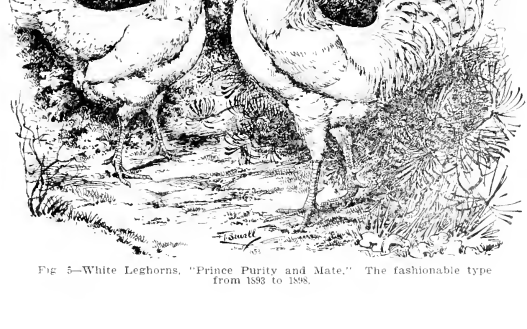


Fig. 5—White Leghorns, "Prince Purity and Mate." The fashionable type from 1893 to 1898.

female Silver Duckwings possessing excellent shape and sprightly appearance, a Duckwing-White Leghorn cross was not at all improbable or impossible, where lengthening of back and tail of White Leghorns was the object fanciers as a rule are prone to believe that the end justifies the means, so govern themselves accordingly.

Lengthening and Drooping of Tails

We call attention to this extreme lengthening and drooping of the tails in modern White Leghorns, not because conservative judgment objects to longer tails set at lower angles than the present Standard demands, but as a warning to the extremists not to overdo a good thing and destroy the characteristic Leghorn type.

The first prize White Leghorn cock at New York 1909-10 is probably the finest living model of the fashionable type of White Leghorns today. This bird is an old one, who has been successfully bred to females, of his own blood lines, reproducing in the male progeny his characteristic back and tail lines. A study of the angles at which these tails are carried compared with the carriage of the tails of the Standard male ideal Leghorn and the Cornell winner of 1893, will show a difference of ten to fifteen degrees between the fashionable modern White Leghorn and the Standard and Cornell ideals. If the low carried tail is the modern breeders' correct ideal, then our American Standard of Perfection is incorrect in two sections, namely: The angle at which the tail is carried; and the length of the back. To meet the requirements of the fashionable type of Leghorn males, the angle should be reduced from 45 to 35 degrees, and the back instead of being of "Moderate length" as required by the revised Standard of 1910, should be "rather long." This, it seems to us, would be consistent and bring the male type in harmony with that of the female, the latter being long in back with well spread tail, carried quite low, in nearly all the winning specimens in the past ten years. It is true that the new Standard describes the back of the male as "sloping downward from shoulders to center of back, then rising in a gradually increasing concave sweep to tail," which fits the modern Leghorn male back line nicely, and gives the whole back the appearance of being rather long, but the preceding words of "moderate length" do not convey clearly enough the real length of the back outline. The Cornell pullet of 1893 (see Fig. 5) and the Standard ideal illustration of 1905, show the desirable length of back found in winning females today. To mate a comparatively short-backed male like the one illustrated in the Standard of 1905 with long backed females is not calculated to produce the best results, if single matings of White Leghorns should be the rule, and not the exception.

In shape of breast and body and length of legs modern White Leghorns are nearly ideal, these sections blending harmoniously and producing the sprightly, graceful carriage that topped with a fine head and comb, and a well furnished and nicely carried tail, makes the Leghorn one of the handsomest and most attractive breeds of fowl on earth.

FIG. 6—IDEAL WHITE LEGHORN HEAD
Winner of Special Prize at New York, 1909-10 for Best Head and Comb

Improvement in Shape and Smoothness of Combs

Combs in both males and females have improved greatly in shape, smoothness of texture and in regularity of serrations in the past fifteen years. They have also been bred down to a respectable size, the old large, heavy, thick fleshed, coarsely serrated and thumb marked comb, common twenty or more years ago having disappeared. The Standard illustration furnished a good ideal for breeders to breed to and the type is generally approved by modern fanciers of White Leghorns, although such leading breeders as D. W. Young and George H. Burgott believe one more point should be added to the Leghorn comb, contending that the first small serration is not strictly a point, no more than the first notch in a saw is a tooth. We illustrate herewith the winner of the special prize at the Madison Square Garden, New York, 1909-1910, for the best head and comb.

Single Comb White Leghorns

Origin and History of the Development of the Most Famous Strain of Single Comb White Leghorns in America—Line Breeding and Careful Selection of Sires and Dams Responsible for the Great Improvement in Type and Comb—Systematic and Scientific Feeding of Grains Important in Obtaining Pure White Plumage.

D. W. Young

HAVING bred the same strain of White Leghorns for the past thirty years, it may prove interesting to Leghorn breeders to know the origin of this strain. It was in 1853 that Mr. W. Simpson claimed to be the first breeder of White Leghorns in this country. He got them from an officer of a ship, which came from some Mediterranean port. About the same time Captain Stratton of Lewisburg, N. Y., (a small place opposite the city of Poughkeepsie) had a barkentine which sailed from Leghorn, Italy, to New York, and which brought over a lot of Brown and White Leghorns or "Italians" as they were known at that period. My father, S. G. Young, purchased these birds and bred them at the old homestead at Clintondale, Highland, New York, for many years afterward, never introducing new blood except through the female. It was from this flock that I started my present strain, which has been kept pure, no new blood having been introduced at any time in the past thirty years.

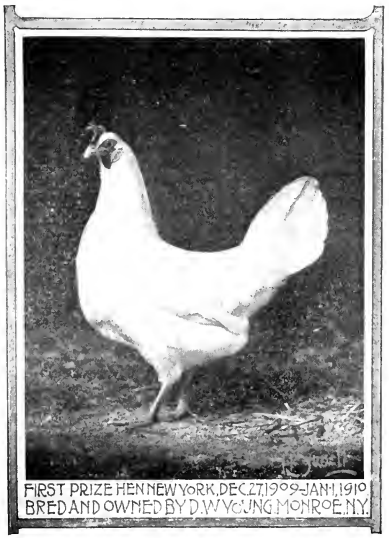
I started to improve the type of the breed at once

beginning with breeding for small combs so as not to handicap the small frame of the Leghorn, at the same time lengthening the back and dropping the carriage of the tail. The early Leghorns were almost squirrel-tailed, and short in back, the combs being very large, thumb-marked and unevenly serrated, with long coarse wattles. Both combs and wattles were a decided handicap, especially on cold days and nights of the winter, freezing completely off in a temperature not lower than fifteen above zero. The neat small comb and wattles of the modern Leghorn do not freeze readily; neither do they make such heavy drain on the vitality of the bird. The deepening and lengthening of the body increased the strength of the White Leghorn, making a more vigorous bird and a greater layer. Scientific mating, careful line breeding and feeding foods that are rich in protein, enabled me to accomplish the above result, but soon found that we were approaching the Minorca type, in fact, nearly adopting it, so started to breed from birds which possessed longer, lower and well spread tails and concave backs. We found this improved the appearance wonderfully, bringing out the beautiful curved lines that give the unsurpassed grace and style of the Leghorn. Another improvement made was in lengthening the legs of White Leghorns, which gives them more power of endurance, as they are one of the greatest foragers among domestic fowl.

Improving the Color

The first White Leghorns bred in this country were not of the pure spotless white plumage found in the Leghorns of today. It was impossible to find a male bird whiter than straw color or not ticked with brown or black feathers in those early days and for years afterward it was a rare instance when a male was found free from creaminess or brassiness. I started twenty-two years ago to produce pure white plumage by breeding from the greatest layers which were always the whitest birds and feeding only food that was free from any color pigment, using white instead of yellow corn, as an illustration.

The White Leghorn cockerel illustrated above is the son of first prize hen at New York, 1909-10, referred to by Mr. Young in his article.



The White Leghorn hen illustrated above is the dam of the first prize White Leghorn cockerel at New York, 1909-10, referred to by Mr. Young in his article.

The eye of the Leghorn years ago was pale, being yellow or daw in color. This by careful selection has been bred out and replaced by the brilliant red eye, which adds greatly to the beauty of the bird, also giving it a more snappy and vigorous appearance. The yellow and red ear-lobe has disappeared and the beautiful, almond shaped, pure white lobe has taken its place.

These improvements in shape and color have given us a variety that stands unequalled among our domesticated races of poultry as an exhibition and utility fowl. The White Leghorn breeds perfectly true to type and feather from single matings if line bred. Our first prize hen at Madison Square Garden in 1909 was the dam of our first prize cockerel at the same show. He was also 1st cock Madison Square Garden 1910. Both are illustrated in this article. We use a pedigree or line breeding chart for all of our matings, so can trace the breeding of every breeder and show specimens back for many generations.

Standard Ideals

The old Standard ideals for both male and female were correct in type, except in the male, which should be longer in back and carry tail at an angle of 40 degrees and combs still smaller in both sexes.

Exhibition Leghorns Best Layers

Standard-bred or exhibition White Leghorns make the best layers because they are the result of years of careful selection and breeding to attain the length of body, depth of keel and legs set well apart that form the proper frame for big layers. This, in addition to the fact that very little fat forming foods for years have been fed to our Leghorns, account for their superiority as egg producers over the smaller, shorter bodied type of twenty-five to thirty years ago.

Feeding and Housing Leghorns

On the proper feeding of White Leghorns largely depends the success of the breeder in the show room and the profit he realizes from the eggs produced. I start chicks with Spratt's chick food, containing plenty of protein. This is dampened slightly and fed alternately with Cyphers chick food five times a day and continue these two foods until chicks are about six weeks of age. After that we feed a mixed grain ration made up as follows: One part wheat, one part oat groats, one part barley groats, and one part cracked white corn three times a day. The hoppers we keep filled with meat scraps and bran. The chickens have plenty of free range, which provides abundant vegetable food. The laying hens are fed as follows: First feed in litter at daylight consists of, one part wheat, two parts slipped oats, one part white corn, one part barley, and one part golden millet. The night feed is given at 4 P. M., and is the same as in the morning. At noon we throw oats and millet, about a handful for every four hens, in the litter. In the hoppers we use a dry mash consisting of one part ground oats, one part wheat bran, one part wheat middlings, one-half part oil meal, one part of beef scraps, and two parts cut alfalfa. These hoppers are left open for one hour each day at noon. In addition the fowls have access to pure water, charcoal, oyster shells, grit, and vegetables at all times.

A typical White Leghorn cock in shape and carriage, conforming closely to the Standard description in both back, and tail sections, the tail being well spread and carried at an angle that finds favor with White Leghorn breeders of today.

Houses and Yards for Leghorns

My houses are twelve feet square, ceiled with one inch North Carolina pine. Roofing paper is placed on either side of the studding and rafters, forming a four inch air space. The floors are made of concrete, 3x4 inch floor beams being laid and the latter covered with spruce flooring. This prevents dampness and is proof against weasels, rats, minks and mice. We never keep over fifteen females to one male in one of these rooms, as we can get better results and more eggs of a higher fertility from this number than by doubling the number in the same space. The floor of each house is covered with about one inch of coarse building sand or fine gravel on which about eight inches of cut dry straw for litter is placed. The latter is thrown back once a week and the floor raked and cleaned. The roosts are made of 2x4 hemlock joists, planed smooth and the corners rounded, placed eight inches above the droppings platform, the latter being three feet wide and two and one-half feet from the floor with a three inch shingle lath on the front and back to keep in the sand, with which it is filled, in its place. This is cleaned every morning before daylight the year around, so that the birds can use it as a dust bath, which makes a great saving of floor space. The houses are white-washed twice a year and the latest approved sanitary methods are carefully applied to insure the health of the fowls.

Preparing for the Show

White Leghorns which have been properly housed and fed as outlined above, require little of extra preparation for the showroom, except washing. Our method of washing is as follows:

After confining the bird in an exhibition coop for three or four days, in order to accustom him to confinement, I take a basin of hot water and soap, and scrub with a nail brush his head, comb, legs and feet thoroughly. Next take five tubs of soft water, the first being heated to a temperature of about 110 degrees, Submerge the bird, head and all in this tub. After the feathers are soaked through to the skin, I take a cake of Ivory soap and rub it well into the feathers until a lather is formed. Am not afraid of using too much soap. After I am sure the bird is clean, I rinse off as much of the suds as possible in this water. Next the bird is put in tub number two, which water is heated to about 90 degrees, and rinsed well in this. Then put in tub number three, the same temperature, and rinse carefully in this water. Next place in tub number four, same temperature, then in tub number five, which is cold and blued a little more than is ordinarily used for laundry work. After taking bird out of the last tub, he is placed in a room heated to about 90 degrees, in a training coop tbout three feet square, with clean cut straw or shavings for litter, being very careful to keep it clean so that the feathers will not become soiled. Of course, it pays to look after the birds while they are drying as the feathers are liable to become twisted, especially the sickle feathers of the male birds. In about twenty-four hours after this is done the plumage will be in perfect shape and the bird, if he is white naturally, will be perfectly clean and as white as snow.

Breeding White Leghorns to Standard Requirements

Type and Size of Great Importance in the Selection of Breeding Stock.

Ezra Cornell

IT WOULD seem an easy matter to tell others how to breed exhibition White Leghorns, but I find it otherwise. The whole story seems to be told when you have said, "Mate your best exhibition males with your best exhibition females." Theoretically, that is all there is of it, and would probably leave nothing more to say if our best exhibition birds were perfect and had been bred from perfect specimens. But where the rub comes, is that our birds are never either perfect or alike—every bird has its faults. They may be slight, but still they exist. It is these faults, perhaps, added to those of the mate, and as like as not accentuated in the offspring, that make all the trouble. If White Leghorns had been bred true to the standard for centuries and were a product of nature, it would be a comparatively easy matter to perpetuate standard characteristics without the faults, but as they are a production of man's genius, they have a strong tendency, as have all our domestic fowls, to revert to their natural or original state. It is for these reasons that those traits which we consider faults are so persistently cropping out.

How to keep your birds up to the highest state of perfection is a problem which presents itself with each year's matings. You must study the standard, study the ideal cuts and learn to know exactly what is wanted—then study your birds. Never breed from a bird having a serious fault, or mate birds that are faulty in corresponding sections; if you do, the fault will probably reappear even more prominently in a very large percentage of the offspring. Another important thing and one that must not be neglected or slighted is to know that your birds are well bred and to know the faults that were greatest in their ancestors. You might get an extremely fine specimen which was produced by chance; that is, bred from inferior birds, but such a bird is not, as a rule, a good breeder. Good stock birds are only produced after years of careful breeding—after mating specimens of the finest standard type for a succession of years. In this way and in no other will the desired traits become well fixed and reproduce with any degree of satisfaction.

The best White Leghorns I have known have been produced by standard or single matings, that is, exhibition males and females have been produced from the same mating. There is no necessity to resort to double matings unless it is to produce slightly better lobes, but this is too insignificant to repay one for the extra trouble and expense.

Our birds must, first of all, be true to type, as it is type that makes the breed. To get birds correct in shape, you must learn what the correct shape or type is, and there is no better way of learning this than to study your standard, also the ideal cuts. Do not believe that the tail should be carried low or well back, because some breeder or judge happens to have gotten such an idea and publishes an article setting forth his notion as a fact. Refer to your standard and see what it says and, as a rule, you will not go far wrong if you follow it.

Let us consider size. There is no fixed size required, consequently there is a vast difference of opinion as to what the correct Leghorn should weigh. Personally, I prefer the females to weigh five pounds, and the cocks to weigh six and one-half pounds. There is not much difference in the weights of the hens and pullets at the time of our winter shows, but the cockerels have not then attained their full weight; they are somewhat slower in filling out, the heavier layers are slower to mature, are poorer layers, and are almost always of a poor type. Many will undoubtedly consider these large weights, but they are about the size of the best birds seen at New York and Boston. I have seen Leghorn hens, both in Whites and Browns, at New York weighing six and one-half pounds, and I saw one Brown Leghorn cockerel which weighed eight and one-half pounds. Such birds are of course extreme and are undesirable.

Next take the head, the most essential feature of which is the comb. This must be good, especially on the Whites. No matter how good your bird is in other sections, he will not pass muster either as an exhibition bird or as a breeder if his comb is bad. A Leghorn comb should be of medium size, not large, as many seem to think. The female comb should be firm on the head and stand perfectly erect in front, including the first point, the rest of the points falling gracefully to one side. Such combs as this are by no means common; in fact, too little attention has been given to this particular. With such combs as these on the females you will have little trouble producing good combs on the males.

Another important point is that the front of the comb should not extend forward on leaving the head. If it does, you will have too much material and will get small folds commonly called "thumb marks," which are unsightly and should be avoided. The present standard calls for five points. In this I think it is too severe. If a comb is otherwise good I think it makes no difference whether there are five or six points, and you can not tell at a glance which number a bird has; but if there are only four, or if there are eight, you will notice at once that there are too few or too many. It is not my intention to advise any breeder not to follow the standard as nearly as is possible.

The earlobes are the next important part of the head, and are by no means easily produced by single matings. If you get good, well enameled lobes on the females you are likely to get males with white faces, whereas if the face and lobes of the male are good, you will probably get poorly enameled lobes on the females. The earlobes of the males rarely remain good as the bird advances in age; they almost invariably become rough and slightly specked or streaked with red, or else the bird becomes white in the face. The latter is by all odds the least desirable. The white face is very unpleasing in appearance and is something I would not have. You will frequently get cockerels which will never go white in the face, but which possess lobes that are indistinctly outlined. Such birds are usually considered to have white faces, whereas they have not and never will have and should of course be less severely criticised than those which have that failing. I like cockerels to have a fair sized, round, well enameled lobe—one that will almost always show a little red in older age, and females with rather poorly enameled lobes, which are not too prominent. Females with lobes of this kind will produce good lobes on the male offspring, and will themselves pass muster in the show room, with but a slight cut.

A pure white plumage throughout is demanded, and from the way this subject has lately been taken up a person would almost be led to suppose that heretofore breeders had not made a proper effort to produce white birds, but I assure you that many have been doing all they could in this direction.

During my first year as an exhibitor, pure white birds were not uncommon at New York, but a rich yellow shank and beak were never to be found on those pure

WHITE LEGHORN COCKEREL

Winner of first prize at Buffalo, 1907; also winner first honors at Boston, 1908. An exceptionally fine Leghorn male in type and sprightliness, the erect carriage being characteristic of the breed. This bird was bred and exhibited by G. L. Wheeler, Penn Yann, N. Y.

white birds. One of the most successful birds I have ever owned—a winner of three firsts at New York—never had even so much as a yellow tint to his shanks. He was pure white—plumage, shanks, beak and all, but he won. Then the reaction set in and a rich yellow leg was demanded and soon appeared, but with a creamy tint to the plumage.

I have seen birds with yellow shanks and white plumage, but I have never yet seen a pure white bird with the rich, deep yellow shank and beak—such a colored shank and beak as is wanted and such as we should have on all young stock. Many claim this to be a possible combination; may be it is, but I have never seen it, and I have seen most of our best eastern show birds of recent years, and I have been a careful observer of them. By mating pure white birds you will in a very short time entirely lose the color of the shanks and beak, and in order to restore this color you must use a bird with the deep, rich yellow shanks and beak and a creamy tint in the plumage. By a creamy tint I do not mean a straw-colored bird, a yellow bird, or a brassy bird. I believe in sticking to the rich, deep yellow shanks and beak, and then get as white birds as you can.

Personally, I prefer young White Leghorns with the creamy tint and rich yellow shanks and believe them to be the best and the correct color. The creamy tint in plumage is merely condition and not lack of good breeding. Take a flock of pullets showing this tint very distinctly and after they have been busy laying eggs for a year or two, without once stopping to recuperate by setting, you will find that they are white enough; the creamy tint will have altogether disappeared with loss of vigor; the shanks and beak will also have lost their deep, rich yellow appearance, and will have become a much lighter shade. If these birds were white to start with, they will have become white throughout—shanks, beak and all. Old birds immediately after molt also show this creamy tint in plumage, but soon lose it as the feathers ripen, or, as we call it, harden down.

If the creamy tint was not condition, it could not disappear or change as it does, and I consider it entirely wrong for judges to cut a bird for color as they always do when shown in this condition. If they cut at all it should be for condition and nothing else. An old bird showing this tint (that is, soon after molting) is not in good show condition and should be cut, but a young bird should have this tint when in the very pink of condition, and should not be cut either for color or condition.

In the winter of 1892 and 1893 I purchased the best eight White Leghorn males and the best fifteen females I could find, at a cost of $345. These birds won every first and second prize at the New York show of that year, and at once gave me something to advertise and the foundation stock of my present strain. With this number of birds I was able to make a sufficient number of matings to enable me to continue without once going outside for new blood, and I consider this the only safe and satisfactory way of breeding. There might have been a better way of starting, but if I was to start again it would be in pretty much the same manner, or as near to it as my means would permit.

(The above article was written by the late Ezra Cornell for the first edition of "The Leghorns," and being of such instructive merit it is reprinted in the present edition. As Mr. Cornell was one of the most careful, intelligent and conscientious breeders of White Leghorns of his day, the advice on the correct mating of Single Comb White Leghorns so clearly presented by him should prove not only interesting but valuable to all breeders of this popular variety.—Editor.)

Rose Comb White Leghorns

One of the Most Profitable Egg Laying Breeds for the Farmer—Chickens Grow Rapidly and Mature Early.

J. J. Peters

THE choice of the farmer should be the Rose Comb White Leghorns because the most profit or money in poultry is in the breed that lays the most eggs at the least possible cost, and this variety of the Leghorn family fills the bill in this respect.

They are specially adapted for the farmer who has free range for his fowls, as Rose Comb White Leghorns are great foragers, picking up much of their food in bugs and insects, which cuts down the feed bill, although they are light eaters in comparison with other breeds.

As chicks the Rose Comb White Leghorns will grow twice as fast and will mature earlier than other breeds. A Rose Comb White Leghorn chick at six weeks old, will be completely feathered and the farmer can put them out on free range, providing a colony house for every 50 chicks, and at 3 months old, you will find that your chicks have the broiler size and can be sold if you so desire at this time and reap some benefit or profit therefrom. You can also distinguish the pullets from the cockerels and so this would be a good time to dispose of the males not wanted for broiler use. As a fowl for the table they are good, by many they are considered very good. The pullets often begin laying at 5 months old, their eggs are pure white and large and 10 will weigh 1 pound. Rose Comb White Leghorn pullets should weigh not less than 3 pounds, hens not less than 4 pounds, cockerels not less than 5 pounds and cocks 6 pounds. Farmers can realize if they were to sell them on the market and get 10 cents per pound, so every hen weighing five pounds would bring 50 cents, which is not giving them away. Considering their enormous egg yield per year I will say that you will have a good egg laying strain that will average 15 dozen eggs per hen each year and receive 20 cents per dozen, then each R. C. White Leghorn hen will be worth $3.00 for her eggs only and 50 cents for her carcass, if you should want to sell her on the market, so the actual income of a R. C. White Leghorn to a farmer would be $3.50, which is a good showing and none of the heavier breeds can equal this. The total cost of feed per year will be $1.00 for each hen and the income $3.50, a net profit of $2.50 per hen. Their egg producing qualities have been proven in several egg laying contests.

From a fancier's standpoint, I think to breed the true Leghorn type in males and females and at the same time the pure white color in their plumage, with good low square set spike combs and bay red eyes, creamy white ear-lobes and tails carried at a good angle not too high nor low, well spread or fan-like, not forgetting their egg-producing qualities is enough for any man to find and make some improvement every year. By proper mating you can breed in or out what is not wanted. I will say to fanciers of this breed that it is not so easy to breed pure Leghorn type birds that are white as some of our

ROSE COMB WHITE LEGHORN COCKEREL

other fancy poultry friends believe it is, although I have bred and raised and sold many winners of the blue and red and white ribbons, the past 12 years, but up to this day I have only seen a few birds that were what I call top-notchers, and these are only a few out of many that are raised, so I know the fancier can always find room for improvement in this breed, especially to get the grand curves a typical Rose Comb White Leghorn male or female should have. A breeder can always find a ready sale for such birds every day in the year.

Breeding Rose Comb White Leghorns

P. H. Edwards

IN BREEDING the Leghorn, as in any other breed of fowls, or in fact, any kind of stock, keep two things in view, practical utility and show room beauty. I place utility first, as without size, strength, and vitality, you cannot hope for show birds that will reproduce themselves. Build on a foundation of vigorous health, select as good specimens otherwise as possible, and success is yours.

Do not start as cheaply as possible, and do not pay fabulous prices for stock you know little or nothing about. Do not buy indifferent stock and expect to breed up to

ROSE COMB WHITE LEGHORN HEN

something fine; you may do it in time, but it will cost you more than to buy good ones at the beginning, not counting lost time. Breed from the largest stock you can get. Always set the largest pure white, perfect shaped eggs. I have set nothing but the largest eggs for years, until at the Colorado Springs Poultry Show last winter the hall superintendent said my pen of R. C. W. Leghorns laid the largest egg of any bird of any breed in the show room.

Breed from a female that is long in body, neck, and leg. Comb fine and even on the head, and in size to conform to the rest of the bird, and from a male that is compact, with full breast; tail carried low, heavy plumage, legs long; comb and head the very best you can obtain, as upon this depends in great part the shape of comb and head of your chicks.

Select the male first for shape, second for color; the female, first for color, second for shape; but have both qualifications as good in each as possible.

In color, either White, Buff or Black, select the bird with the best undercolor, other things being equal, and with the desired color in the shaft feathers of tail and wings.

In the white bird look for a blue white, not creamy white, in the shaft feathers.

Breed from mature stock, it will give you stronger chicks, and you can tell before you use a bird in the breeding yards whether his or her color will stay with them after the molt or leave them after the first year.

Keep a record of all stock; then by knowing just what mating produces the best chicks, you know where to go for more of the same kind. My experience teaches me that in order to obtain what you want you must breed from the description of bird that suits you.

My first attempt with Leghorns was in 1893, at which time I had the S. C. Black variety. In 1894 I produced a yellow legged, black hen, the equal of which in color of legs and plumage I think was never seen outside of our stock. She went through the show room year after year, always winning first, up to the last Mid-Continental show at Kansas City, Mo., when she was shown with one of her sons, a yellow-legged cockerel, each winning a first prize in a large class.

In 1895 I first exhibited a R. C. White Leghorn, winning extensively at Colorado Springs. The next year I bred from the same stock and was successful in the show room. The next year I bred from a bird that won as cockerel and as cock. Last year I bred from birds sired by first cock at Madison Square Garden, New York, 1897, and again the produce won.

It will be seen that to breed winners I bred from winners, and I never failed. Like will produce like the same in poultry as in other things, and if your stock of birds will not hatch uniformly you have mongrel blood somewhere, and the way to do is to find it by single mating, then throw it out. If it is in all your stock, throw them all out, and buy from some one who can prove to you that he has what he claims—thoroughbred stock that will produce its kind.

White Leghorn Breeders' Symposium

Changes in White Leghorn Type in the Past Ten Years Have Improved the Laying Qualities—The Best Layers Are Birds That Come Nearest the Standard Requirements—Average Flock and Individual Egg Laying Records—White Leghorns For Market.

IN ORDER to get the views of successful and prominent breeders of White Leghorns, on the proper type for Standard and market requirements, the average yield of eggs laid per capita annually, the cost of feeding and marketing the broilers, we sent a list of questions to leading fanciers in the East and West.

The contributors to this symposium are:

N. V. Fogg ..... Kentucky
W. W. Kulp ..... Pennsylvania
Robert Herman (Connors Poultry Farm) .... New York
Huff Poultry Yards ..... Pennsylvania
J. C. Punderford ..... New Jersey
Hutchins Brothers ..... New York
Harmon Bradshaw ..... Indiana
H. E. Humphrey ..... New York
George Barrows ..... New York
Robert D. Parmenter ..... Illinois
Harlo J. Fisk ..... New York
C. W. Sixt ..... Ohio
George B. Ferris ..... Michigan
L. S. Dayhoff ..... Pennsylvania
E. J. Huber ..... Wisconsin

1. Have the changes in type of the White Leghorn of ten or more years ago been any improvement towards increased egg production?

Yes, some of the best layers I have ever bred were birds that came nearest the Standard requirements, and I believe the changes in type and shape have done much to improve the laying qualities of these birds.—N. V. Fogg.

The White Leghorns of today are beautiful in shape and are far better for egg production than any that were bred before, unless the body is left to become narrower. If you breed for good width across the back, you get room in the egg-making part. The better shapes bred today can do nothing but help to make better workers.—W. W. Kulp.

I can see a vast improvement in the egg production of White Leghorns in the last few years.—Robert Herman (Conners Poultry Farm).

As to my type of a laying Leghorn, the change in type of the Leghorn of the present day from that of ten years ago is an improvement toward increasing egg production.—Huff Poultry Yards.

I think the changes in type and shape of Leghorns in the past ten years have made a large improvement in egg production.—J. C. Punderford.

The type and shape of the S. C. White Leghorn in the last ten years have not only beautified the bird from a fancier's standpoint, but have increased the egg production—the increase in size, the long, deep body and well rounded breast indicating vitality and vigor.—Hutchins Brothers.

Yes.—Harmon Bradshaw.

I do not think the change in type and shape of the White Leghorns has made any particular improvement toward a larger increase of eggs, since the best layers are the ones that are bred as the Standard requires; namely, a long well-arched back, which makes the best layers, in my opinion.—H. E. Humphrey.

Indirectly, yes. It has stimulated the breeders to be more thorough.—George A. Barrows.

I don't believe the change in type and shape has had any effect on increasing egg-production. That is my decided opinion.—Robert D. Parmenter.

Yes, I think they have.—Harlo J. Fisk.

I think not.—C. W. Sixt.

The changes in shape and type of White Leghorns have had no effect upon egg production.—George B. Ferris.

Yes.—L. S. Dayhoff.

I do not believe that the changes in type and shape of White Leghorns have changed the egg laying qualities to any material advantage.—E. J. Huber.

2. Do you consider there is a fixed type for layers, and if so, describe what important characteristics, as to shape and outward appearance, the ideal layer should possess.

As a rule, my best layers are birds of about average size, with broad breasts and backs and bodies of good length. Their combs are of good size, but not too large, and their tails carried about the same as required in Standard.—N. V. Fogg.

To be a good layer it is not absolutely necessary that a hen be of a certain shape, but I do know that I breed one of the finest strains for eggs, from shape breeding. I

WHTE LEGHORN HEN

A noted winning hen of excellent exhibition type, showing good length of body and a well spread tail and fine head points. Bred and exhibited by G. L. Wheeler, Penn Yann, N. Y.

want them wide first. It will give strength and room for the egg organs. My results, according to others, proved I was right over and over again.—W. W. Kulp.

I have found a fairly large bird with a long back will lay a large number of good-sized eggs that command an advance over the market price.—Robert Herman.

I think there is a fixed type for layers. An ideal layer has: first, a small head; second, a slender neck; third, a long body, tapering from back to front; fourth, short and small-boned shanks; fifth, is a restless and busy hen.—Huff Poultry Yards.

The lengthening of the pelvic cavity is looked for as an egg type much the same as we look for a distinct dairy type in a cow.—Hutchins Brothers.

Yes; good layers should have long bodies.—Harmon Bradshaw.

If we breed our Leghorns with a good arched back, wide, full breast, and wide undersaddle, there will be no question as to their laying qualities, and they will be with the blue ribbon winners when placed in the show room—at least I have found that to be a fact.—H. E. Humphrey.

The most important characteristics for layers in Leghorns are: body, rather deep (especially in back), also broad; legs well apart; comb not too small; and the bird active and vigorous.—George A. Barrows.

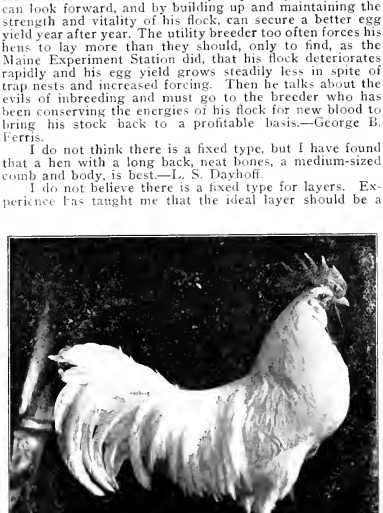
I don't believe in an "egg type," as my long experience with trap-nest records has given me too many types with high records.—Robert D. Parmenter.

No.—C. W. Sixt.

I do not consider that there is a fixed type for layers. The vigorous, active bird—the one that is properly grown—is always the best layer, regardless of shape. Yet a flock of high-scoring hens will lay much better, all conditions being equal, than a flock not bred for standard qualities; not because their shape matters, but because they have been grown properly. Every fancier knows how quickly overcrowding or neglect in any form will render worthless a very promising bunch of youngsters. Consequently every successful breeder of exhibition birds watches the growth of his stock very carefully and is ready to go to any expense to insure the best development of every chicken on the place. The health and vigor of the breeding stock are never depleted by injudicious forcing to secure a record egg yield; the pullets are never urged to lay before they are thoroughly matured. Because of the good prices he gets for his stock and eggs, the breeder of exhibition birds can afford to give his stock better attention than the purely utility breeder. He can look forward, and by building up and maintaining the strength and vitality of his flock, can secure a better egg yield year after year. The utility breeder too often forces his hens to lay more than they should, only to find, as the Maine Experiment Station did, that his flock deteriorates rapidly and his egg yield grows steadily less in spite of trap nests and increased forcing. Then he talks about the evils of inbreeding and must go to the breeder who has been conserving the energies of his flock for new blood to bring his stock back to a profitable basis.—George B. Ferris.

I do not think there is a fixed type, but I have found that a hen with a long back, neat bones, a medium-sized comb and body, is best.—L. S. Dayhoff.

I do not believe there is a fixed type for layers. Experience has taught me that the ideal layer should be a worker, and of course to work she must be kept in the best of condition at all times. By a "worker" I mean that she must be continually scratching, and on the lookout for feeding time. A lazy hen—one that sits around a good deal and only wakes up to life when she hears the feed pail rattle—never will make a good layer.—E. J. Huber.



First S. C. White Leghorn cock Illinois State Show January, 1910. This bird won second as cockerel at the State show in 1909, and first as cock at Galesburg, Ill., 1910. He is owned by Robert D. Parmenter, Knoxville, Ill., breeder of S. C. White Leghorns exclusively.

WHITE LEGHORN COCKEREL

From an unretouched photograph of the first prize cockerel at Springfield, Ill., and Galesburg, Ill., 1910. A rarely good picture of a most symmetrical and stylish White Leghorn male. The fashionable low carriage of the tall and long sloping back are admirably portrayed. This bird was bred and exhibited by Robert D. Parmenter, Knoxville, Illinois.

3. What has been your average yield for a flock?

184 eggs has been my best average egg yield from a flock of 200 hens.—N. V. Fogg.

I have never been able to count a flock of Whites for a full year. Browns, 242.—W. W. Kulp.

We run Leghorns in flocks of 350 birds. Egg yield for flock will run from 180 to 200 eggs.—Robert Herman.

I had a flock of seven laying hens last year that laid 1,394 eggs, but I could not tell which hen laid the most eggs. That was the best laying I ever had.—Huff Poultry Yards.

Fifty per cent.—J. C. Punderford.

The average yield for our large flocks has never exceeded 150 eggs per hen, while individual hens have exceeded that.—Hutchins Brothers.

Have not been able to keep record for a year on account of selling so many of the females.—Harmon Bradshaw.

As my flock has averaged over 60 per cent. for the whole year, and as I breed for utility as well as for exhibition purposes, I have hens that have laid 175 eggs in 12 months.—H. E. Humphrey.

I am breeding fancy and unable to keep complete yearly record. My best record for 16 hens, for four months, is 105 eggs each. The hens that were not sold out of this pen, laid extra well during the whole year.—George A. Barrows.

180 eggs per hen a year.—Robert D. Parmenter.

146 eggs from 12 hens in 10 months' test, and some of them were in shows during the 10 months. Never made but the one test.—Harlo J. Fisk.

Ten hens laid 1,850 eggs in one year.—C. W. Sixt.

The average egg yield of my entire flock is from 150 to 160 eggs per year.—George B. Ferris.

Fifteen dozen in twelve months.—L. S. Dayhoff.

Our average yield for a flock has averaged 170, and we have no doubt that many individual hens will average 200 and better.—E. J. Huber.

4. What has been the best record made by any individual specimen?

208 eggs per year. S. C. Buff Leghorn.—J .C. Punderford.

I have some individual hens that averaged 28 eggs each for the months of March, April and May, but I found that their eggs did not hatch as well as those that laid less.—H. E. Humphrey.

212 eggs, but could not get a fertile egg from this bird, and am positive that the male bird was not at fault. She laid a large, misshapen egg.—Robert D. Parmenter.

5. Do you consider it advisable to use trap nests and practice pedigree breeding, as a means of improving laying qualities?

I do not consider it profitable to use the trap nests and practice pedigree breeding on a large poultry farm. Whether it is successful in any event, as a method of improving laying qualities, I am not prepared to say, as my experience in this line has been limited. It cannot be used on a large scale without a good deal of time and expense, and I have never seen any reports that show it is profitable to use it on a large scale. However, there may be some who breed only a small flock, that have been able to improve their bird's laying qualities to some extent. Those who breed only a few birds have a chance to get the poor layers out of their flock by this method, and therefore increase their profit. I notice in a report from one Experiment Station that, after ten years of careful work in this line, the average egg yield at the end of the experiment, instead of increasing, has decreased 23 eggs per hen. In this case it is a losing proposition in more ways than one.—N. V. Fogg.

The trap nest is a fine thing, but it is not absolutely necessary to breed a flock of the best layers.—W. W. Kulp.

I believe a commercial plant does not have the time for this kind of work.—Robert Herman.

I think the trap nest is advisable, as well as the practice for pedigree breeding, for by so doing one can always breed from the best laying birds.—Huff Poultry Yards.

Yes.—J. C. Punderford.

The trap nest is a step in the right direction, but cases are very rare where a 200 egg hen has reproduced herself in her offspring. The 200 egg hen is yet a prodigy like the extremely high record dairy cow. Feeding and environment must accompany the trap nesting.—Hutchins Brothers.

Yes, by all means.—Harmon Bradshaw.

I consider it a good plan to use trapnests, but at the same time this pedigree breeding proves unsatisfactory, as all prolific layers do not always produce good layers. My method is to select strong, vigorous females that are as near the Standard as to shape as I can select in my judgment and mate them to a male that has good points in all sections; and in most cases I will be satisfied with the results.—H. E. Humphrey.

Not with Leghorns if extra help is required to tend them.—George A. Barrows.

I most certainly do, though a high record bird will not always breed birds of still better laying qualities. A bird must have the power of transmission.—Robt. D. Parmenter.

Yes, indeed.—Harlo J. Fisk.

We do not use them.—C. W. Sixt.

No.—George B. Ferris.

Yes.—L. S. Dayhoff.

We believe that to build up a heavy laying strain, the trap nest system is the only reliable one, and we would advise anyone not satisfied with their average flock records, to install trap-nests and in this way find out which are the best layers and which are the drones. After

A stylish and well balanced type of the modern White Leghorn male showing exceptionally good head points, the comb being almost ideal in shape. The tail is well furnished and carried at the required Standard angle.

The pullet illustrated above is the winner of first prize at the Michigan State Fair and at Grand Rapids, Mich 1910. She combines in a rare degree, superior exhibition type with the necessary utilitarian qualities. The length of body and well spread tail carried at the proper angle are well portrayed in the above picture.

he has found out his best layers, he should breed from these birds from time to time, and the continuation of trap-nests for four or five years will work wonders.—E. J. Huber.

6. (a) Is it profitable to produce Leghorns as broilers? (b) as fryers? (c) as small roasters?

(a) Yes, they are very attractive broilers and will make as much profit as any other breed I have tried. (b) Yes, they are fine flavored and make a fine market bird up to two pounds.—N. V. Fogg.

It is profitable to produce Leghorns as broilers. I had a customer in Canada hatch Wyandottes and Leghorns at the same time, and the Leghorns brought more than the Wyandottes at the same age. I prefer a cross of the Leghorn on a large breed, for broilers—and especially for fryers. For roasters I would use a larger chicken.—W. W. Kulp.

Our trade demands a Leghorn broiler—both squab and larger size. They are no good for fryers or roasters.—Robert Herman.

There is a small profit in Leghorns for broilers or fryers, but I think it is time and money lost to raise them for roasters.—Huff Poultry Yards.

WHITE LEGHORN PULLET

The illustration above was reproduced from an unretouched photograph of the first prize pullet at Chicago and Indianapolis. Although the poise of the bird in the picture is not very good, low carried tail and fine head points are readily distinguished. The pullet was bred and exhibited by Harmon Bradshaw, Lebanon, Ind.

(a) Yes. (b) and (c)—Have never done so, but should say not.—J. C. Punderford.

Leghorns are not so profitable as formerly for broilers on account of the advance in the price of feed. If good hatches can be obtained, the early cockerels are profitable for broilers; but the pullets will bring more for stock. Some of our local dealers advertise not to bring White Leghorns at all as broilers. They develop very rapidly for fryers or roasters.—Hutchins Brothers.

I believe it is, but have not been able to keep enough birds to give it a test. Hope to be able to do so within the next year or two.—Harmon Bradshaw.

No doubt there is money in Leghorn broilers and fryers, providing you are near a good market; but as to roasters, they are too small and they require too much feed for the money that you would get from the investment. A Leghorn should be about six weeks old and weigh at least two pounds, which would bring from $1.00 to $1.25 per pair.—H. E. Humphrey.

No experience with Leghorns in this respect.—George A. Barrows.

(a) Yes. (b) Yes. (c) Not in my experience.—Robert D. Parmenter.

(a) Yes. (b) Do not think so. (c) Do not think so.—Harlo J. Fisk.

(a) Yes. (b) Yes. (c) Yes.—C. W. Sixt.

(a) Yes, in the early spring. (b) Yes. (c) No.—L. S. Dayhoff.

In a community that prefers small, one or one and one-quarter pound broilers Leghorns will prove to be one of the best articles in the line of broilers. They are tender, juicy, and their nice yellow skin gives them an appearance that "makes your mouth water." We confidently believe that where Leghorns are raised on free range, they will make very profitable broilers, as they will need very little feed, being such great rangers.—E. J. Huber.

7. At what age and weight are Leghorn broilers most profitable and what is the average price a pair in the best wholesale and retail centers?

From seven to twelve weeks old when they should weigh from one to two pounds each. Much depends on the way the birds are fed and cared for, as to how soon they will be ready for market. In this section in the larger cities fine, fat birds, weighing from one to two pounds each, retail from $.50 to $1.50 per pair, according to the season.—N. V. Fogg.

We sell in the Philadelphia markets and they require them from one and a little more to one and a half pounds, bringing about sixty cents each.—W. W. Kulp.

We use Leghorn broilers for squabs ¾ to 1 pound each. Price, wholesale, 75c to $1.15 per pair. Larger broilers, 1½ pounds to 1¾ pounds each. Price $1.00 to $1.25 a pair.—Robert Herman.

At from 10 to 12 weeks they will weigh from ¾ to 2¼ pounds. My home market pays me in the early spring, from 30 to 40 cents per pound, but there are markets that do better than this.—Huff Poultry Yards.

Leghorn broilers at eight weeks old, at 1½ to 2 pounds, bring in our wholesale and retail centers, 75 cents to 25 cents apiece.—M. L. Hutchins.

A Leghorn should be about six weeks old and weigh at least two pounds, which would bring from $1.00 to $1.25 per pair.—H. E. Humphrey.

At 1½ to 2 pounds for either broilers or fryers, provided birds have made proper growth. About ten weeks old.—Robert D. Parmenter.

At 1 and 1½ pounds. From 50 cents to 75 cents per pair, according to season.—Harlo J. Fisk.

1¼ to 1½ pounds each; price according to quality—from 70 cents to $1.25 per pair; age, from 10 to 14 weeks.—L. S. Dayhoff.

They can be made to return a handsome profit as fryers and small roasters, and for a family of two or three a nice plump Leghorn roaster weighing from two to two and one-half pounds is very desirable. Leghorn broilers are most profitable when about three months old. In this district they will sell from $1.00 to $1.50 a pair.—E. J. Huber.

8. What does it cost to keep a Leghorn hen per year?

It costs from $1.00 to $1.10 per year to feed a hen properly in this section of the country at the present prices of feed.—N. V. Fogg.

I don't know, but I should judge that it costs me $1.80 each.—W. W. Kulp.

$1.00 will keep a Leghorn hen in clover for a year. My birds average me about 87 cents each, as I cut all my own bone and I get it at the market for nothing.—Huff Poultry Yards.

About $1.10 a year.—J. C. Punderford.

It costs from $1.00 to $1.10 a year to keep a Leghorn hen a year. It costs just as much to keep a Leghorn hen as the heavier breeds, after they are grown.—Hutchins Brothers.

If I can keep a Leghorn hen for $1.25 a year I am perfectly satisfied. Taking into consideration the price of grain at present, I do not think I am very far from the cost, providing all and what is required is fed.—H. E. Humphrey.

About $1.20, if given good range.—George A. Barrows.

At price of feed now it costs $1.50, though it can be done a trifle cheaper.—Robert D. Parmenter.

From $1.00 to $1.35 according to cost of feed.—Harlo J. Fisk.

Seventy cents.—C. W. Sixt.

For feed, 100 pounds each—and the sort of feed will make price per hen.—L. S. Dayhoff.

Our Leghorn hens cost us between $1.00 and $1.20 per year—never under $1.00 and very seldom over $1.20, but of course we raise a good many different kinds of vegetables, which we do not credit against the birds.—E. J. Huber.

9. How many hens can be kept in one flock and give the best results in egg production?

I have had better results from fifty hens in one flock, for egg production, than a larger number, although at different times during my experience with layers I have had as many as 150 hens in one flock and still received good results, but not so good as when not over 50 were kept in one flock.—N. V. Fogg.

I don't know, but I think I should like fifteen best—from fifteen to twenty-five.—W. W. Kulp.

We find a flock of 350 birds will lay as many eggs per hen as a flock of 50 birds.—Robert Herman.

For the very best results I never keep over eight or ten hens in a flock—mostly eight.—Huff Poultry Yards.

I have found that 45 females will give better results than a larger number. They will not crowd so much at night and are easier to care for.—J. C. Punderford.

Few men can keep more than 100 hens in one flock and get the best results; and then they must have plenty of fresh air and free range.—Hutchins Brothers.

About 50 or 60.—Harmon Bradshaw.

I think 25 hens a sufficient number to keep in one flock for best results, but some breeders think the larger the flock, the more eggs you will get. This has not been the case with me at least.—H. E. Humphrey.

Ten to fifteen.—George A. Barrows.

Twenty-five to thirty—no more.—Robert D. Parmenter.

Twenty-five hens give the best results, but flocks of 100 do well under the same systems of feeding.—Harlo J. Fisk.

Thirty to fifty.—C. W. Sixt.

Not to exceed 100; less if convenient.—George B. Ferris.

Not over 50 hens.—L. S. Dayhoff.

We never exceed fifteen hens in a flock for good results in egg production.—E. J. Huber.

10. Do you consider it advisable to remove males from flocks kept solely for the production of fancy market eggs?

Yes, I believe the birds will lay as well. The eggs will be of finer quality, will keep longer, and the feed consumed by the males will be saved.—N. V. Fogg.

I should remove males if I were producing fancy market eggs.—W. W. Kulp.

I do not run males with flock kept for market eggs. They do better work without and you do not have the extra birds to feed.—Robert Herman.

I do, as the eggs not fertilized will keep fresh longer (a strictly fresh egg is an egg one day old).—Huff Poultry Yards.

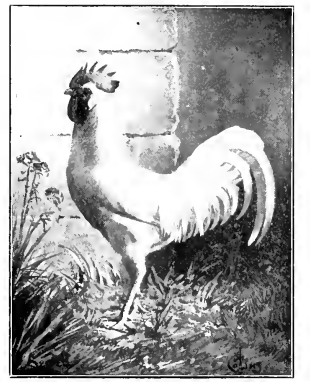
I do. In the first place an infertile egg will keep longer than a fertile one; second, the females are not worried and kept on the jump.—J. C. Punderford.

Too much care cannot be taken in the selection of our males. I would not select a male from a flock kept solely for egg production any more than I would from one solely from a fancy point of view. The type makes and preserves the breed; the hen that lays is the hen that pays.—Hutchins Brothers.

Yes. I believe the hens will lay just as well or better, and the eggs will keep fresh much better.—Harmon Bradshaw.

With no exception, I think it best to have no males with hens unless you want the eggs for incubation, from the fact that an infertile egg will keep longer, and also that you will not supply the whole country with eggs for hatching, to parties who would not give more than the market price for any eggs, whether they were laid by a hen valued at $1.00 or $10.00 each.—H. E. Humphrey.

Not entirely.—George A. Barrows.



WHITE LEGHORN COCK "BOB III"

One of the most successful winners in the West is the White Leghorn cock illustrated above. In 1906 he won first at Chicago, Indianapolis and Thorntown; in 1907 he captured the blue ribbon at Indianapolis and won second at Boston; in 1908 he again captured first at Indianapolis. This bird is owned and was exhibited by Harmon Bradshaw, Lebanon, Indiana.

Females are more contented with a male in the flock, and a male to twenty or thirty females will not hurt market value of eggs materially.—Robert D. Parmenter.

Yes.—Harlo J. Fisk.

Yes.—C. W. Sixt.

Yes.—George B. Ferris.

Yes.—L. S. Dayhoff.

We think it advisable to remove males from flocks kept solely for egg production, as infertile eggs will keep a good deal longer than a fertile egg.—E. J. Huber.

11. Will feeding yellow corn affect color of white plumage? Why and how?

Yes, I have made several experiments in feeding white and yellow corn to birds; taking birds all hatched in the same machine, dividing them into two lots and feeding both lots the same feed in every way, with the exception of corn, giving one lot yellow and the other white. At maturity many of the birds fed on yellow corn had a very brassy plumage and others were very creamy. The lot fed on white corn had a fine white plumage and their legs and beaks were a rich yellow. Have tried the experiment on old birds several times and have come to the conclusion that feeding yellow corn to white birds has much to do with their color. I would not advise any one to feed yellow corn to white birds under any circumstances, unless he expects to sell them for market purposes. I prefer yellow corn for feeding market birds.—N. V. Fogg.

I never could see that it made a mite of difference whether corn be yellow or white. I saw five males the other day and one got yellow eating the same brand of corn the four that were white had eaten. It is in the blood. Don't blame it on the feed if you missed it. There are much more potent agencies than yellow corn to make or produce yellow. One is lack of sunshine after September 15th.—W. W. Kulp.

It will, but we always feed yellow corn to Leghorns kept for market eggs.—Robert Herman.

I do not think the feeding of yellow corn affects plumage in the least. I once fed a flock of Leghorns yellow corn, and a flock in the next pen—white corn. There were ten hens in each flock; at the end of the year the one pen of birds was as white as the other.—Huff Poultry Yards.

I think yellow corn will affect white plumage in a small way. It is apt to give a yellowish tinge to the feathers.—J. C. Punderford.

We are positive the feed has no influence on the plumage of a bird. It is in the blood and not in the feed. Breed white and you get white.—Hutchins Brothers.

Yellow corn has no effect on the plumage of white birds, unless, at the time they are getting their second feathers, it might affect the surface; but when the bird is

matured and the sap has disappeared from the quills—which it will do, if the bird is white—the color of the plumage will not be affected by the feeding of yellow corn.—H. E. Humphrey.

Yellow corn will affect the white plumage on most birds by giving it a creamy or straw color, but I have had some birds that it would not hurt at all.—Harmon Bradshaw.

A White Leghorn male possessing the shape and style of the bird illustrated above stands a very good chance of winning in the strongest competition. While the comb of this bird is rather large and approaching the Minorca type of comb, the head, lobes and wattles are well balanced; the neck, back and tail outline is characteristic of the modern type Leghorn; the tail is well spread and carried at an angle that harmonizes with the rest of the body sections.

Yellow corn will certainly give white plumage a creamy tinge, if fed during the moulting season, especially.—George A. Barrows.

Yellow corn will "cream" all pullets and "brass" the cockerels. It will even change the blue-pink skin of a pure white bird and make it yellow. As to why and how I have my theories; let someone else answer.—Robert D. Farmenter.

Cannot say personally.—Harlo J. Fisk

It will to some extent if fed while feathers are growing—but not much.—C. W. Sixt.

It is my experience that it will. There are some birds so white that a diet comprised largely of yellow corn will leave them reasonably white; but even these birds would be whiter without the corn. There are others that, if fed much on corn, will be decidedly creamy—so much so that they are ruined for exhibition; yet, if raised on other grains, they would be exhibition birds of the finest quality. The bird that can stand corn without becoming creamy is really a white-skinned one that will never make a prime market chicken. A yellow-skinned bird kept white by judicious feeding is much more valuable because it is easily fattened when desired.—George B. Ferris.

Yes, this is a settled fact, and I will not give the reason. Will it make an egg yolk yellow? Yes.—L. S. Dayhoff.

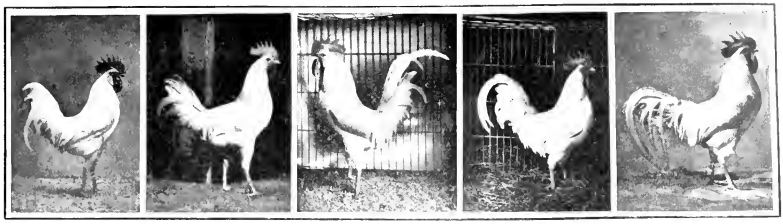
We believe that the feeding of yellow corn affects only the oil in the quills, having a tendency to make the quills oily and creamy. Yellow corn does not further affect the plumage. Creamy plumage and brassiness are in the breeding of the bird, and are not the result of what it is fed on. We do not, for an instant, tolerate a brassy bird on our farm.—E. J. Huber.

That breeders of White Leghorns are not a unit on a number of the subjects discussed in the above symposium is readily perceived, but the points brought out pro and con will prove valuable, instructive and lead to a more thorough investigation of some of the problems that have not been satisfactorily solved up to the present time.

One of these is the effect the feeding of yellow corn has on the plumage of white fowl. Until more thorough tests in feeding white and yellow corn to selected pens of white fowl are made, and these tests are carried on for a period of years, breeders will continue to differ in their views on this subject. Personally we have always considered real silvery white plumaged fowl immune, believing the color of the grain fed to such in no way affected the color of their plumage.

That the majority of Leghorn breeders agree on the long bodied bird as the best layer is evident after reading the answers to question No. 2; neither are they very far apart on the average egg yield per annum per capita of a flock of White Leghorn hens. While a few individual records show layers that produced over 200 eggs in one year, the yield can safely be placed at fifty per cent or 182 eggs for the highest and 150 eggs for the average flock. 200 egg hens are evidently not in sight yet, at least not in large flocks of Leghorns.

A White Leghorn hen that lays 12 dozen eggs in twelve months is a very profitable producer, if the figures giving the cost of maintenance for the year are correct. As $1.00 to $1.50 is given as the cost of the grain and other food a White Leghorn hen consumes in 365 days, it needs only 12½ cents a dozen for the eggs to balance the feed bill. With White Leghorn eggs averaging 25 cents a dozen, a gross profit of 12½ cents a dozen can be realized. What the cost of labor, interest on the investment and other items of expense amount to depends on the poultry raiser, but he has a very safe margin in the 12½ cents profit to work on.



1 2 3 4 5

Group 1:—Nos. 1, 2 and 3 are birds illustrating the stilted type of ten years ago. No. 2 has a long but flat back. No. 3 has a short, sloping back with high contracted tail. No. 4 is a Boston winning cockerel of 1903 with a nearly level body with full breast and a tail carried a trifle above 40 degrees. No. 5 has a low tail and long sickles and hangers that were spoiled in conditioning.

White Leghorn Bodies, Tails and Legs

Illustrations That Show the Improvement That Has Been Wrought in the Shape of White Leghorns During the Past Years.

Franklane L. Sewell

Head of Buff Leghorn imported by August D. Arnold, Dillsburg, Pa., 1894.

INTERNATIONALLY popular is the Leghorn, because of its record as an egg producer, therefore the subject of the improvement of this race of fowls is of constant interest to the progressive breeders of them.

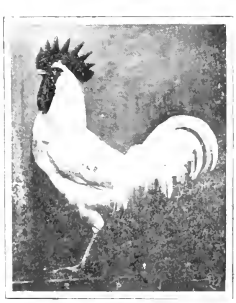
The short-sighted man may say, "So long as I get eggs a-plenty, why trouble about the looks of the birds that lay them," but breeders of Standard-bred fowls do not take that view of the matter. They have learned that there are types from which we can expect the greatest number of eggs. Fanciers have found that it is well to select birds that approach the accepted standards which are ideals that have become established because they have proved to be in harmony with the most highly developed individuals of the breed they represent.

Leghorns are not bred to great size. They are the "little Italians." It is their nature to be active, busy, constantly foraging. In shape they are a combination of the most graceful lines found in domestic fowls. The last ten years of Leghorn history have been especially interesting to fanciers who have witnessed the progress in their ideals brought about by the selections of enthusiasts who have been ambitious to further improve and beautify this already charming race.

Fanciers and judges decided some ten years ago that longer bodies would add to the value of the breed. Long bodies at that time were almost unheard of, excepting in individuals of the coarser type and these too often possessed the flat form of back. The production of longer bodies and backs with a graceful concave sweep from the shoulders out on the tail, together with the much desired lower carriage of tail and long saddle and tail covert plumage with all sections in agreeable proportion, has not proven easy to accomplish, nor have birds possessing these qualities been exhibited by many.

A good length of body is considered by practical minded breeders as essential for the Leghorn that is to be an egg machine. Fanciers demand that the show Leghorn shall be not only practical but beautiful and they are succeeding in a wonderful degree in establishing this happy combination of qualities in their favorites.

In 1899 it was possible to win first place with such a short backed, high tailed cock as No. 3 of group 1. On this Madison Square Garden winner the tail was not only high, but much too closely held and his back was not only short and sloping but narrow at its juncture with tail. Comparing his breast with that on the next one in the group, No. 4, it will be seen that it was far from being full as a good Leghorn's breast should be. The first three cockerels in group 1 appear somewhat stilted on their legs. Modern fanciers of Leghorns do not like short legged specimens, but these three males are rather high on their legs to be truly symmetrical Leghorns. Of the three birds No. 2 is the most symmetrical and he is rather longer than the average in all sections of his frame, but it will be noticed that length is secured at the expense of graceful lines, the back in particular being severely straight and joining the tail with an abrupt angle. Nos. 1 and 3 are deficient in breast development, while in general style No. 2 leans toward the type desired in the Minorca. He shows the stilted carriage, the long, straight back and the underline of the body running nearly parallel with that of the back. The sickles on the tail of both 1 and 2 do not extend high enough up against the tail proper. Even in No. 1, which was a mature cock, nearly



No. 6—A White Leghorn cock, winner at an English show in 1905. He resembles a Minorca in shape, having a long body, with rather low tail, but he is very coarse and angular.

the upper half of the tail proper plumage is exposed. Properly carried sickles rest against the upper pair of main tail feathers nearly or quite to the tips, bending so as to form a curve like a sickle from which they take their name.

English Leghorns Often Large

Comparatively large sized Leghorns are often exhibited in England. All that we have ever seen of them possessed coarse, angular forms, very much inclined to what American fanciers consider distinctly Minorca shape. No. 6, a cock bird, is an illustration of one of these large Leghorns. The character of the head points, the long, angular lines of the body, wings and legs as well as the texture of the plumage, all would have stamped this bird as a Minorca if his yellow legs were not considered. See illustrations 6 and 7.

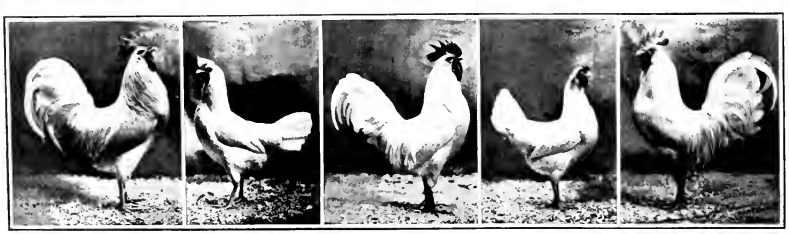
No. 7 was a promising cockerel that would later exhibit much the same type as No. 6, but his head points were not so coarse. The serrations of the comb, however, resemble that of the Minorca in their "circular, saw tooth" arrangement instead of the points leaning backward to the rear of the blade. The shoulders of this cockerel are not so decidedly prominent and angular as those of No. 6.

Some British authorities attribute this prominent angular character of shoulder to Malay blood, but we have not yet seen specimens that showed indications of the introduction of blood other than Mediterranean and from the Minorca. The principal objections offered against the large angular birds have been that they matured late and did not prove to be such good layers as birds of the generally accepted Standard type for Leghorns. These are serious defects when we consider that the main economic claims for Leghorns are early maturity and egg production. It means simply that their most valuable characteristics have been lost or diminished in value.

In 1903, at Boston, before the demand for much lower tails had been widely felt, one of the most attractive males of the year was shown by Chas. J. Fogg. It was of serviceable type with full breast and good breadth of body extending well back, and he had a wealth of long saddle feathers. The tail is a little above the angle of forty-five degrees (at that time popular) and the sickles extend well up against the tail proper and are of good length and show a beautiful curve. Three side hangers on the side portrayed are well developed, but the absence of the lowest or fourth hanger leaves an opening in what otherwise would have been a very well furnished tail. If the bird had had just a trifle longer body and higher station with a little lower tail and the saddle curving up with smoother finish against the root of the tail, this cockerel might have been a dangerous competitor in eastern shows. The change suggested in this bird would have helped him to approach the type of No. 15.

No. 7—A 1905 English cockerel with a long back and low tail, in training to exhibit an exceedingly low tail. This cockerel did not lift his tail to a horizontal position.

In group 1, No. 5 is a portrait of a prize cock at Chicago, 1905, when the effects of the demand for lower tails had begun to be seen at the larger shows. If this cock had had a finer head and had been properly conditioned for exhibition, he would have been a worthy specimen. As some expert conditioners would express it, "He was spoiled in the tub" or rather "in the drying," for his fine tail is badly disarranged, the upper side hangers taking a position down over the lowest hangers and the saddle falling away at either side of the root of the tail, exposing it instead of curving up in a smooth concave finish over the fluffy roots of the tail plumage. It has grown to be a commonly accepted ideal with leading Leghorn exhibitors that the perfectly finished saddle and tail must join in curved lines. To do this the saddle plumage of both sexes must be profuse and smoothly cover the roots of the tail. Such a long plumaged tail carried so low would be greatly valued by some breeders whose stock birds persist in carrying their tails too erect and who fail to develop proper length of sickles and side hangers. However, such unusually long sickles as appear on this specimen are not ideal sickles. Those on Nos. 4, 13, 17 and 21 are rather the proper length and show more nearly the proper curve for Leghorns.



8 9 10 11 12

Group 2—Nos. 8 to 12: No. 8 was the cock heading first pen at the Boston show, 1905. No. 9, "Edna," was a long bodied, low tailed hen for her time. She showed the progression being made and was of great value in establishing her type in one of the most successful strains of today. Nos. 10, 11 and 12 were 1906 New York and Boston winners. After that year a noticeable change in favor of lower tails was observed. No. 11 is a close approach to an ideal Leghorn of her time—1905. She was one of the most symmetrical females that has ever appeared.

When the tail of a male Leghorn is carried as low as cock No. 5 carries his and has such long plumage that the sickles reach the ground, they do not keep the true sickle curve, but their weight straightens out the latter half and in this form they approach the type of tail found on young males of the Long Tailed Japanese varieties and they should not be considered ideal for the Leghorn.

Among Leghorns that of late years have been of special prominence at New York and Boston on account of their rapid approach toward the modern ideal for the breed, are those from the yards of D. W. Young, Monroe, N. Y., in fact his annual exhibition at the New York show has had much to do in assuring fanciers that it is possible to reach the modern Leghorn ideal and that it is most beautiful when attained. Up to 1905 White Leghorns of good length and with low tails were rarely seen in the

13 14 15 16 17

Group 2—Nos. 13 to 17: These males had exceptionally well formed tails for their time. No. 17, "Edward 4th," showed a considerably lower tail than had heretofore been exhibited—1906—on White Leghorn males with such fine style and finish. He won at both New York and Boston in 1906 and as cock at New York in 1907. No. 13 shows sickles that are nearly ideal in proper length and curve. No. 14 is the same female as No. 9, group 2, in her pullet form when she won first at New York. No. 15 was the most symmetrical and finest finished cock of 1906. No. 16 was a trim, close plumaged female with fine head and she was long from shoulder to rear of saddle for one so close feathered. Fanciers prefer tails spread somewhat more than this bird shows.

New York show. In combining length of body with gracefulness of outline and general finish, the Leghorn has made a more valuable and more popular bird.

Some Noted Winners

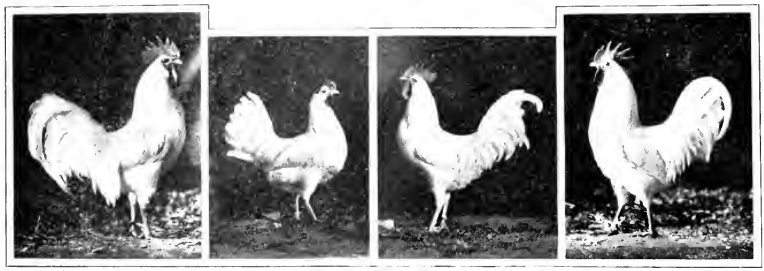
Two successful winners at the St. Louis World's Fair owned by Elm Poultry Yards, the first prize pullet and second prize cockerel, Nos. 19 and 20 in group 4, showed not only long bodies but the pullet was particularly full in breast and was much admired for her wide-spread tail. Another characteristic noticeable in these two birds is that their bodies are carried more nearly on the level than is the case with most Leghorns. While this has never been demanded in the breed, it can be seen by referring to the few that carry backs nearly level that the saddle reaches up on the tail better when the back is carried that way. In the next cockerel, No. 21, this point is well illustrated. With the back sloping greatly and with the tail carried high, it is next to impossible to find or to train the feathers of the saddle in a gracefully curved line up on the base of the tail. In Nos. 15, 17, 21, 22 and 23, it will be seen that the lines from the back to the tail have a graceful curve. Such lines are always much admired by Leghorn fanciers.

In cockerel No. 10 the sweep is also concave, but it is short and the angle of back and tail is more abrupt than has been seen on Mr. Young's best winners of the last two or three years. At that time, 1905-1906, he led in his class with first honors at Boston. In the following year, 1907, Mr. Young in his Edward 12th, No. 24, set the fashion well ahead and produced an ideal worthy of repetition for several generations. However, the production of this cockerel was not to be so greatly wondered at as he followed in line of descent the cockerel Edward 4th, No. 17, group 3, that won at both New York and Boston, 1906, and at New York in 1907. Geo. H. Burgott who judged this bird in his class at New York said that he was the finest Leghorn he had ever seen or judged. W. Theo. Wittman said he beat any picture that had been drawn to date and was nearer perfection than he thought it possible to breed them.

No. 8, group 2, the first winning pen cock at Boston, 1905, shows a generous sized body of good length with profusely furnished tail, but he carries his tail above 45 degrees, so the back does not show its length to such advantage, nor does the saddle take so graceful a sweep as is the case with Mr. Young's later winning males. The improvement over this bird will be readily seen when comparing it with a portrait of Edward 12th.

A feature that always adds charm to the beauty of a fine Leghorn female is a wealth of long saddle hackle feathers and as some of the males develop. Old "Butterlegs," No. 18, group 4, first Boston cock shown by Elm Poultry Yards in 1907, possessed an extraordinary length in this section. A glance also at No. 4, group 1, No. 12, group 2, and No. 15, group 3, teaches one the value of such feathers to a show bird. In the pose of No. 12, although the back does not appear long the exceeding great wealth of saddle plumage adds much to the bird's furnishing and his general high-class appearance. In natural spread of tail, this cock, No. 12, exceeds any other male in the collection. We imagine that this feature might be overdone, yet we find all Leghorn fanciers pleased to see their birds carry their tails well spread, the common fault being that the tail is carried too much contracted, which makes a poor display of the fine plumage the bird may possess. We previously referred to Nos. 4, 15, 17, 21 and 22 as fine Standard tails.

The best formed Leghorn tails from the rear view are not held close with the tail proper feathers tightly closed, but open out at the bottom feathers perhaps two or three inches, besides this the top of the tail should not be formed like a sharp wedge, but should be rounded at the base where the saddle will find ample support to rest and



18 19 20 21

Group 4—Nos. 18 to 21: Cock No. 18 shows a wealth of beautiful, long saddle plumage. No. 19 was the first St. Louis World's Fair pullet. She had a full, rounded breast, long body and beautifully spread tail. No. 20 was the second St. Louis World's Fair cockerel. He had a long body and carried his tail at 45 degrees. Note that the bodies of both Nos. 19 and 20 are carried nearly on the level. No. 21 was an exceedingly flashy styled cockerel, first at Boston, 1907. He had elegant curves in all sections and was owned by Elm Poultry Yards.

form a concave sweep up over the tail coverts. The breast of the Leghorn should never form angular outlines, but be as round as the breast of a pigeon. It should not be flattened in front of the wing shoulders, but should round boldly forward. The breast bone should extend well forward and form a rounding curved line that continues in an unbroken curve to the neck. Nos. 1 and 3, group 1, show breasts that are very scanty and are poor breasts when compared with such as Nos. 4, 13, 15 or 21.

The Leghorn is not bred as a large fowl, but on account of its very rapid maturity is profitably hatched and reared for "squab broilers" to be killed when about one and one-half pounds, forming tender morsels for special high-priced trade. This is one reason why the full, plump breast and breast bone of good proportionate length should be encouraged. It is a fact also that the full, well-muscled breast always denotes vigor, strength and physical perfection, in other words, thrifty, practical fowls for money makers on the farm or for fanciers' favorites on country estates and in the show room.

As foragers for a large portion of their keep, these fowls should be particularly strong on their legs. When selected to a stilty type, there is great difficulty in keeping the back and breast of proportionate breadth and in producing close hocks. No. 1 is a specimen in which the hock joints of the legs are close together. No. 15, group 3, stands with particular strength on his legs. Every muscle appears to be firm from the ground up.

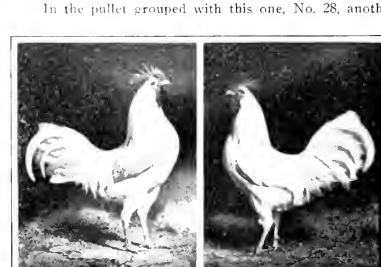
As a rule, Leghorns have very well formed feet. It might prove very disastrous to breed from one with weak or crooked toes, even though the specimen possessed many other fine qualities. When the breeder realizes that so much of the bird's general symmetry, his carriage and perfection of pose and style so much depend upon perfect feet, he will not be tempted to breed from birds that are not perfectly sound in this section.

In our attempt to keep the younger fanciers posted and to help the distant fancier who is not able annually to reach the important eastern shows, we would like to state that in the article published on page 74 on "Heads, Comb, Wattles and Ear-lobes," we advocate the selection of birds showing fine combs and are pleased to say that several leading White Leghorn fanciers have fully decided to select birds with small, fine combs, such as are illustrated in cockerel No. 24 and in hens Nos. 25 and 26—both because of the neatness of such head gear and because such combs stand the winter frost best and birds possessing such combs have been found by practical breeders to equal as layers females that have much larger combs. It is the earnest desire of Leghorn fanciers to combine in their favorites all that is practical with every possible point of beauty. They desire to make them truly attractive and of value to the million.

Progressive White Leghorn Females

One of the females that was used most successfully in producing Leghorns that would set the fashion was the well-known "Edna," (No. 14, group 3) first as pullet at New York in 1902 and first in pen at Boston 1905. Her portrait as a pullet in group 3 is considerably foreshortened, but in group 2, No. 9, she shows her unusual length and low carriage of tail to good advantage. Mr. Young's first prize pullet at New York in 1907 resembles her in head points and great length of body. The 1907 winning pullet, No. 27, is more nearly perfect in her symmetrical style of carrying herself. Her full breast, long keel bone, long back and beautifully spread, low carried tail prove how much in harmony these sections can be combined in the typical, popular "laying type."

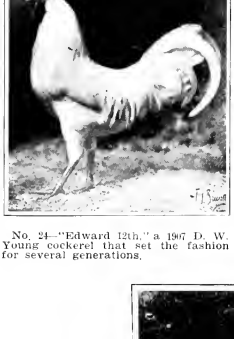
In the pullet grouped with this one, No. 28, another



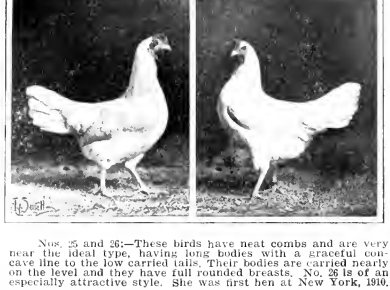
Nos. 22 and 23:—In order to illustrate how well the long body of the modern Leghorn may be carried nearly on a level when the birds assume poses expressing both the spirited and quiet mood, we present these two poses of first pen cockerel at the last New York show. Most males of the old type when startled or excited so that they stretched upward in front would stand like bantams on tiptoe, drop the wing points very low and slope the back, thus changing the entire style. In the modern type we have a showy bird in all points, but we have a bird that under most circumstances can carry himself reasonably near the accepted ideal.

one of Mr. Young's productions, it is plain that the long appearing bodies of such birds are not dependent upon pose. Such birds are of good size when handled, besides having the capacity for producing quantities of generous sized eggs. When such good size can be obtained and established in combination with pretty style and flashy show points, one cannot fail to recognize the value of such birds. The very longest bodies do not necessarily express Mr. Young's up-to-date ideal as he has often pointed it out to a group of Leghorn enthusiasts studying their fine points.

In No. 11, group 2, once first at New York and three times first at Boston, and in No. 20, first hen at New York, 1910, we see show room Leghorn fashion for females quite well illustrated. This type has been described by Mr. Young as exhibiting the "crescentic" underline of body. This line is best seen in the form of the smooth body of the female, although it can be well recognized by experts in the male possessing the type. Nos. 10, 13, 15, 17, 21, 22 or 24 are examples tending toward this ideal. The No. 11, group 2, hen was perhaps the best type of exhibition hen produced to the date of her showing. No. 26, of those illustrated, is nearest to the present-day fashion and spirit of the down-to-date winning White Leghorn hen. Note the arch of her neck, the prominence of her breast and the sweep of her back. Even the underline of her body forms a graceful curve. No wonder Geo. H. Burgott said "They are a bird of curves." In comparing Nos. 25 and 26 one must admit that pose, while it affects the apparent length to a degree, the actually long bird even in the most spirited pose, such as shown in No. 26, exhibits an elongated type.

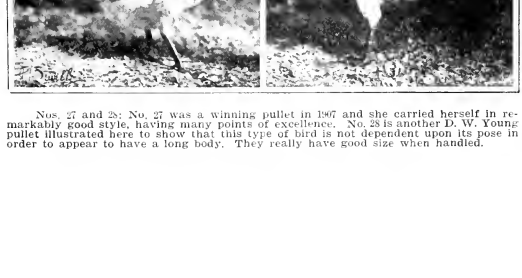


No. 24—"Edward 12th," a 1907 D. W. Young cockerel that set the fashion for several generations.



Nos. 25 and 26:—These birds have neat combs and are very near the ideal type, having long bodies with a graceful concave line to the low carried tails. Their bodies are carried nearly on the level and they have full rounded breasts. No. 26 is of an especially attractive style. She was first hen at New York, 1910.

By noting Nos. 11, 25, 26 and 27, it will be observed that these modern Leghorns are of unusual length from the top of the wing where it joins the back, straight backward to where the rear of the cushion joins the sides of the tail proper. This is a point considered by leading experts as of great importance to the successful modern show-room Leghorns, although it has been a feature quite uncommon.



Nos. 27 and 28: No. 27 was a winning pullet in 1907 and she carried herself in remarkably good style, having many points of excellence. No. 28 is another D. W. Young pullet illustrated here to show that this type of bird is not dependent upon its pose in order to appear to have a long body. They really have good size when handled.

Heads, Combs, Wattles, and Ear-Lobes

The Single Comb of the Leghorn—It is a Type of Comb Fitted to be the Crowning Glory of These Sprightly Birds—A Perfect and Defective Head Shown by Sewell Drawings—Attributes of a Standard Head—Defects and Merits Found in the Head and its Adjuncts Illustrated by Photographs of Many Prize-winning Leghorns.

Frankland L. Sewell

THE original Ballus Bankivus or jungle fowl that authorities claim was the father of all the domestic races of chickens had a small, trim single comb, such as is usually found on small game fowls. There have been many variations from the single type of comb, due to domestication and changes of environment and conditions. They are quite unexplainable, but nevertheless marked and definite in their tendencies and they frequently recur in old established strains.

The single comb, as we would naturally expect, is the commonest type of comb and on many kinds of birds this style of comb proves to be the most attractive. It is usually found on the races that have large tails, adding a bright touch of gay color which balances well with their form and is in harmony with the symmetrical make-up of a particularly showy bird. On the gracefully plumaged Leghorn the single comb has long been bred to a definite ideal by American fanciers in order to establish qualities that are recognized as being beautiful. It must be kept in mind that qualities of beauty in a comb as well as in plumage are best when of such a nature that they will not easily spoil or become out of shape by a little abuse in transportation. Especially is this true if the fowl is to be of value as a show bird.

AN IDEAL

An ideal Leghorn comb showing the desired five points with properly shaped blade and rear point. For description see text of article.—F. L. Sewell.

The comb of the male must be of such substance that it will not fall over with slight bruising or become flabby and lop when placed in the warm temperature of an exhibition hall. It must stand erect and firm, therefore must have good gristle and fiber.

When a bird is in vigorous health its comb, if of the right kind, should keep its shape as well as its bright color in spite of the changes suffered in transit and while being shown.

Besides being erect, firm and straight on the head from front to rear, one of the chief aims of exhibiting fanciers has been to produce the comb with "just five points," besides the one at the extreme end of the rear blade.

The outline of an ideal (which we present herewith) will express this form of comb having the desired five points better than words can describe it. It takes continued, precise selection and breeding, using only five-pointed combs in both sides of the parent stock, to establish the habit in any strain of producing many finely formed combs with the ideal number of points.

The five-pointed "Leghorn" comb was long ago decided upon as the nearest approach to ideal form and symmetry on the head of the breed. It certainly would be difficult to conceive a more elegant decoration for the heads of these birds than the present handsome comb.

The entire blade and main part of a fine Leghorn comb is not thick and coarse, but comparatively thin and fine. The points or spikes are rounded as they approach the tips, but oblong where they join the main blade. In fine combs the surface is minutely grained and might be compared to fine grained leather.

DEFECTIVE

A Leghorn head showing a number of defects in shape, plumage, comb, wattles and ear-lobes that are often found and that make a bird a cull no matter how well bred.—F. L. Sewell.

The height of the comb from above the eye is apt to be about equal to the length of the wattles and the wattles are about twice the length of the ear-lobes. The front or first point should always be the smallest and each point, excepting the fifth, is larger than the one next forward. The third and fifth points are usually about equal in size on nicely formed Leghorn combs. Fanciers prefer to see the points lean very slightly backward rather than to have them appear to be radiating from one center, or as someone has expressed it, "like the teeth on a circular saw." The last point at the end of the rear blade gives a nice finish and smartness to the comb when its tendency is to bend very slightly upward; and it is a fine feature of a show comb when the blade terminates in just a single point. A comb that is free from irregular indentations is much to be desired. The removal of irregularities of the comb has always been a sore temptation to the exhibitor who may be inclined to unfair competition.

The blade of a fine Leghorn comb stands out toward the back, clearing well away from the head. As the Stand-

ard of Perfection says, it should have "no tendency to follow shape of neck," or even to fall close to the head, but it should gracefully clear it with a nicely curved edge up to the terminating point. From front to back the fine comb will be straight and firmly set on the head, free from any bent, twisted or wrinkl d places; and aside from the finely grained surface, it should be quite smooth.

Readers may think I dwell too long upon the qualities of a fine comb, but when one observes how rarely a first prize is ever given to any but the Leghorn with an elegant comb, the necessity for keeping this section up to the Standard will be understood.

The last standard description for the Leghorn head was "Short, deep;" in the present issue we read "Moderate in length, fairly deep." The fine Leghorn head is moderately small, nicely rounded and the neck tapers nicely to where it joins the skull. The eyes are "nearly round," and are bright and alert in expression. It is very seldom there is any expression of cruelty in the Leghorn face. This race is the personification of industry in "hendom" and it is only natural that the expression should indicate this habit.

From the "nicely curved" beak hang the thin wattles which fanciers desire to see well rounded with the oblong edges, curved forward, not hanging in wrinkled folds close to the neck. To hang properly they will have to be almost perfect in conformation and manner of attachment. The manner in which they are joined to the beak is very important and if they are wrinkled at the beak they are almost sure to hang irregularly.

Perhaps one of the most characteristic fancy features of the modern show Leghorn is its ear-lobes. They must be soft, smooth and spotless in surface, like a new kid glove. The object of this article is not to take up any discussion of color, but we will state here that perfection of the lobe demands a life-long perfect condition. Even a slight sore or frost bite, bruise or scar will mar the beauty of the lobes almost irreparably. If you are looking for Leghorns that have always been well cared for you will find that perfect lobes are an almost infallible indication of good care.

In general outline the lobes are oval or "broadened almond shape," as the Standard describes them. The upper end of the lobe is commonly the larger. They should not be puffed or in any part "lumpy," but rather thin, smooth and free from wrinkles or indentations. To produce a lobe approaching perfection is a real achievement and it adds much to the beauty of a show bird. Of course it is a fancy section and on a poorer specimen would be little thought of. We are writing here of the finishing touches to the genuinely superior, all-round-standard-quality show bird, and these rarely attained fancy exhibition points help a long way toward deciding whether the bird is to be a prize taker and a great profit maker.

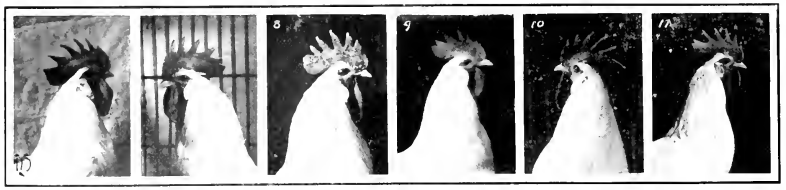
On the correctly plumaged Leghorn the edges of the earlobes and wattles that join the feathered side are not buried or covered by coarse feathers, but the plumage appears neatly tucked up under them.

The Defective Head

In contrast to the regular, gracefully curved lines of the ideal, there are the coarse, irregular defects, all too commonly found and reproduced where indifferent mating is permitted. With the profitable demand constantly increasing for standard-bred fowls of exhibition quality, it pays and pays well studiously to cull out the defective specimens, for their defects are sure to be repeated and often exaggerated in the annual reversion to the original parent birds. Only the closest selection of the best will insure progress. Breeding from such birds is bound to bring improvement. The sketch showing "defective" qualities is not imaginative, but is a combination of some of the more common irregularities that appear in the yard of the man who permits his fowls to mate and produce "any old way." Coarseness from careless breeding here brings the natural product—a cull. Domestication without care and studious breeding breaks up the line of ancestry and the habit of producing a certain type. This illustration is a fair example of a product of blood lines that instead of being adapted to rules that harmonize, exhibit mixed, contrary natures. The comb twists and has grown in a very irregular manner. It puckers from overgrowth in front over the nostrils. Many serrations of undesirable shape have developed. There are double serrations, sprigs at the rear and two large points have outgrown their strength and lop over. At the front the comb extends too far over the beak; at the back it is so far overgrown that the blade pushes against the neck where it joins the head, producing an irritating sore where the comb has broken. The face, wattles and ear-lobes are also very coarse and wrinkled, the wattles being uneven in length. Where the wattles and the face join the beak and mouth there are rough lumps that add only ugliness and grossness to the face and head.

"Well," you say, "that is a cull, he will be eaten." He ought to be, but some breeders send this kind to market and the marketman says to Mr. Suburbanite, "That's a Leghorn. They are great layers," and the outcome of it is that such a bird heads a pen of "Leghorns." After Mr.

Group 1: Nos. 1, 2 and 4 were all first prize winners at Boston, 1905. No. 5 is a portrait of an English Leghorn. No. 3 was a prize winner at Rochester, 1904.



Group 2. Cock No. 7 won first at New York in 1899. The others were prize winners also, but at later dates.

Suburbanite rears a flock from that male and a number of equally poor females, his more-knowing neighbor is called over to pick out the "finest" for next year's breeding. If his neighbor (who may be informed) is honest, they will decide that the whole season has been spent rearing "just a flock of culls" worth only the price per pound at the same market where their sire and dams were purchased.

Heads of Prize Winning Males

When comparing these Leghorn heads and combs, it should be borne in mind that they illustrate the leaders of a breed that has been well established and pure-bred in America for nearly half a century. Variations will not be so great or at once so noticeable as during the first ten years of the history of a variety. However, sufficient variation will be seen to show that there is opportunity for careful selection and breeding to the ideal.

The earliest of this collection to appear before the public was cock No. 7 group two. He was shown by Ezra Cornell and won first at New York, 1899. This strain was built rather high on the legs with sloping backs and rather close plumage and not large tails. The comb is not unlike the description of the bird—"up in front, rather sloping to the rear." The base of the points of nearly all male Leghorn combs, or we might call it, the line where the serrations join the blade of the comb, slopes slightly. Some are not far from level. A few will be found to be carried so that the line is elevated as the points are counted backward. In the latter style the rear blade will be found to extend well up away from the head where the neck joins.

No. 7 shows a straight comb well joined to the head, quite free from wrinkles. The second and third points are too high. The rear blade loses character by a sixth point. In general form the wattles are fair, but look somewhat thick and heavy. The general outline of the ear-lobe is good, but it is rather thick and puffed. The eye looks a trifle small. The neck arches well behind and is joined neatly to the head. In front the neck is rather straight.

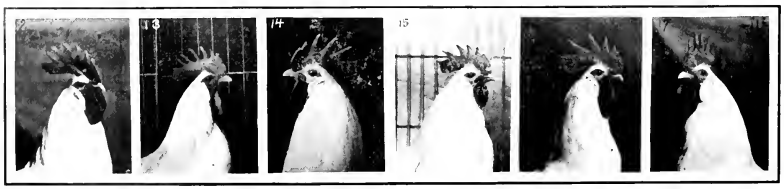
No. 11 was first winner at Pan-American, 1901, and was sold by Ezra Cornell to White Leghorn Poultry Yards. It was a smart, high-stationed cockerel with quite regular and sharply defined points on the comb. The blade terminates in a double instead of a single point and is straight instead of nicely curved on the lower edge, but extends well back away from the head. The wattles are neat and nicely rounded.

No. 15, Group 3, the next to appear in 1903, was D. W. Young's "Arch 1st," the first winning cockerel at New York. He possessed a comb with just five points and the rear blade had the desired "one terminal point." The back end of the blade is rather square. The fifth point might look better just a little shorter and the curve of the front over the beak might be a trifle bolder. The wattles to balance the comb could be a very little longer. The ear-lobes are fine and the whole head shows a valuable bird as a breeder for Standard points.

No. 13, Group 3, was the first winning cockerel at Boston, 1903, and was owned by Chas. J. Fogg. He was a sturdy young bird with plenty of size for a young Leghorn and was of a fine, vigorous type, having firm plumage and full rounded breast. The comb is very straight and regular, although it shows six instead of five points. Breeders have agreed upon five points for the ideal although some would be quite willing to fancy six were that the ideal number instead of five. The lobes are well formed and of nice size. The wattles are of proportionate length, considering the comb and are well formed except that they turn backward a little on the front edges which should hang so as to form a moderate curve forward.

No. 9, Group 2, was the second winner at the World's Fair at St. Louis, 1904. He was not quite so matured as are the birds usually seen at the winter shows, but he was well balanced in body and general form. The comb does not show quite the refinement and niceness about the arrangement of points that could be desired. The fourth point is too broad at the base to harmonize with the rest.

In No. 3, Group 1, we see another upstanding type of similar blood lines as the first two mentioned. This cock was a winner at Rochester, 1904, and was owned by the White Leghorn Poultry Yards. The general form of this



Group 3; No. 16 was a 1907 winner and was pronounced by the judge to be the most typical Leghorn he had even seen. In 1903 No. 15 won first as cockerel at New York and No. 13 first as cockerel at Boston.

comb is shapely. The blade is straight and free from wrinkles. The first point in front has not been preserved and the fourth and fifth points are too long and narrow. The rear blade would be finely shaped but for the projection extending a little way out at the back. The wattles are too short and small for the size of the comb. The general shape of the comb is nearly correct. The neck is a little straight in front.

At the Chicago, 1905, show, White Leghorn Poultry Yards exhibited cock No. 6, Group 2. This cock was long

Group 4: No. 21 was one of the earliest photographs taken at New York. Nos. 18 and 19 were first prize winners at Boston in 1902 and were fine birds then.

feathered and had a large comb, but it was remarkably straight considering its size. It is too heavy and large in the rear, extending too low and close to the head and neck to please Leghorn fanciers. This is the largest American bred comb shown in this collection of heads. The ear-lobes of this bird are too thick and heefy and show wrinkles and a rough surface. The wattles, considering their size, are well formed.

To show the effect of producing still larger combs, we have placed at the right-hand end of Group 1, No. 5, the head of an English White Leghorn male shown at Horsham, Sussex, in 1905. American fanciers would class this as a Minorca, and it is much closer to the Minorca head seen in this country than it is to an American Leghorn head. The coarse surface and large, thick points have been avoided by Leghorn breeders here in America for more than a quarter of a century. The wattles are very large and their front edges curl backwards as do large wattles on Minorcas. In fact his comb, lobes and wattles are what would be expected, here in America, on the Minorca.

1905 was a red-letter year at Boston for D. W. Young's White Leghorns. Three of his male birds won first prizes, No. 1, Group 1, being the cockerel that won first at Boston that year. No. 2 was the cock heading first pen and No. 4 was the first cock in open class. These males are of an old strain that in late years has led the fashion in New York's White Leghorn classes.

No. 1 exhibits a firmly set, medium-sized comb. The front over the base of the beak is slightly wrinkled. The points increase in size to the fifth instead of the fourth, which should be the largest. Below the terminal point on the rear blade is a nick and the fourth point shows a small lump in front instead of tapering smoothly. The beak, face and eyes are nicely formed, the eyes being particularly round and bright. The ear-lobes and wattles are well formed, the latter showing the result of an accident that caused it to grow an angle not far below where it joins. The arch of the neck is a beautiful curve and the plumage has an elegant surface.

No. 2 shows a gracefully formed mature cock with neatly formed head and good expression of eye. The comb has just five points, but they are not tapered enough and the rear blade droops too much on top. The main part of the comb is slightly dished or bent. The wattles and lobes, partly on account of age, are a little rough.

No. 4 is a head of characteristic Leghorn type and neatness. The face is fine, round and clearly defined and the eyes are intelligent. The beak is perfectly curved and the comb and lobes are nicely balanced. The comb, it will be observed, possesses only four points, which is unusual for a comb of such regularity with the front over the beak so well curved up to the first point. While it is not desirable to have so few points in combs, the tendency to fineness in the head is much to be preferred to any degree of coarseness. There is no doubt that a bird having such a head and comb would prove a valuable breeder.

No. 10, Group 2, shows a pose of the head often seen when a bird is carrying its body too high in front to preserve the well-balanced appearance demanded by show birds. The head appears to be of good width, but is drawn backward so that the rear blade appears to be more slanting than it would if the head were held more nearly on the level. The form of the points and serrations of the comb are moderately good. The front of the comb to the first point, also the front edges of the wattles, do not curve smoothly but have irregular outlines. In this pose the neck appears to be too straight and is not arched well at the back.

No. 12, Group 3, was the winning cock at New York in 1906. He was a mature male of superior elegance and

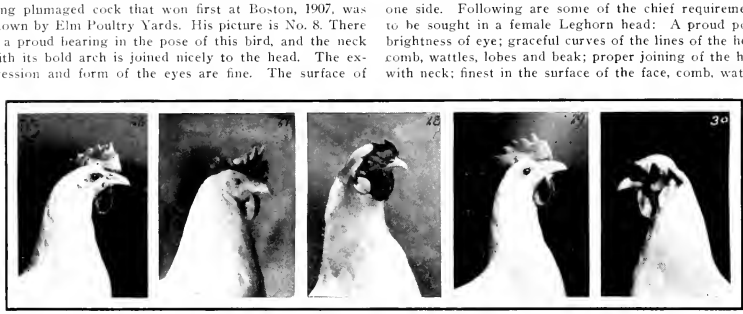
Group 5 No. 22 won as pullet in 1902, as hen in 1903 and again in 1905. No. 23 approaches Standard excellence and No. 24 shows a charming pose.

style and reflected great credit on Mr. Young as a breeder. This bird was chosen as a model for the Reliable Poultry Journal's color-plate for December, 1906 (reproduced on the frontis page of this book.) The character of the bird's graceful type is well expressed in this portrait of his head and neck. The entire make-up shows symmetrical proportions and the "curves" so much sought by Leghorn fanciers are expressed in every line. From beak over tip of points to rear point of blade, the comb is beautifully curved. The large lobes form well shaped oblongs; the neck and breast curve well in front and the arch of the neck is good. It is all true Leghorn

The firm texture of the comb is emphasized by the way the long rear blade extends backward, as though in no danger of drooping. The lobe is the largest, except perhaps on No. 5, of any in this collection, yet the face retained its pure red surface.

Attention is called to the pose of No. 17, Group 3. The head is turned quartering—slightly to the front. It takes a bird having a finely hackled and arched neck to exhibit such a nice curve from the point where the head joins the shoulders when posed in this manner. This view shows the erect position of the serrations, but it does not show that they lean backward as in No. 12, which is another view of the same bird. An unusually long plumaged cock that won first at Boston, 1907, was shown by Elm Poultry Yards. His picture is No. 8. There is a proud bearing in the pose of this bird, and the neck with its bold arch is joined nicely to the head. The expression and form of the eyes are fine. The surface of on the Leghorn female. One old breeder whose Leghorns won at many leading shows twenty years ago, told us he succeeded best in producing fine-combed males by using females that had medium-sized combs that stood "straight upright," and that he produced the most showy females by breeding from males whose big combs were loose in fiber and fell somewhat limp "to one side." This we note is now practiced by some English breeders of Minorcas, but we do not believe it is practiced to any extent by our Leghorn breeders in America.

The modern sized female Leghorn comb, to be correct, should stand nearly erect in front, including the first point, the remainder of the comb drooping gracefully to one side. Following are some of the chief requirements to be sought in a female Leghorn head: A proud pose; brightness of eye; graceful curves of the lines of the head, comb, wattles, lobes and beak; proper joining of the head with neck; finest in the surface of the face, comb, wattles



Group 6: No. 27 was a model in 1901 but would not be today. No. 28 was a winner of first three times at New York and once at Boston.

the comb, however, is excessively rough grained and the points, although five in number, are not well defined in shape. The lobes are more oblong than "almond" shaped.

The cockerel winning first at Boston, 1907, No. 14, Group 3, also belonged to Elm Poultry Yards. He was a male of extreme curves and sprightliness. He had one of the most crescentic formed backs and saddles that could be imagined. The third, fourth and fifth points of the comb are nicely formed, but the first two front points are not good and the rear blade droops somewhat, being too close to the head. The wattles and ear-lobes are a little too short to balance the height of the comb. Altogether, however, it is a neat head.

No. 16, Group 3, shows an elegantly proportioned cockerel that won first at New York in 1907, and that the judge claimed was the most typical Leghorn male he had ever seen. This head shows beautiful proportions and it would be difficult to criticize it, except on the first two points of the comb. These are not properly separated and the coarseness of the fleshy lumps where the wattles join the mouth, is objectionable. This last is a point often overlooked, but one that may detract from the expression of an otherwise fine head. It is often found on Mediterraneans with large combs and wattles.

Heads of Winning Female Leghorns

Although the "Little Italian" is well known by her head gear, these adjuncts vary considerably in size and form, often so much as to change the characteristic appearance to those who are not familiar with the styles of head-dress these jaunty birds affect.

The Standard demands a comb that falls to one side and lobes; correct number of points on the comb; the manner in which it rises in front over the beak and droops to the side.

The spirit of the bird has much to do with her showing a fine head and comb to good effect. Some birds are so nervous and twitch their heads so constantly that an attempt to examine it while a bird stands in its cage is well nigh useless. Other birds, although this is rarely the case with healthy Leghorns, may be found moping in the far corner of their cages. To find them alert and interested in every passing observer, not frightened or fidgety, but posing in jaunty self-consciousness, is pleasing and this style should be encouraged in the Leghorn.

Nos. 18 and 19, Group 4, date back to 1902 at Boston when Chas. J. Fogg won all four firsts in the open classes. The birds were fine for that day, truer to Leghorn type than those that had been winning at many of the important shows. They have not the slender, reachy style of neck, but show daintiness and well-curved lines. The comb in No. 18 is a little thick and wrinkled over the nostrils. The eyes of both are round and bright. The head of each is well rounded. The front of the comb of No. 19 takes an unusual bend toward the side on which it falls, as if originally the comb had started to turn the opposite way.

In 1901 another large Leghorn pullet, No. 27, Group 6, was placed before me as a model. This bird was somewhat above the average of the larger Leghorn females shown today and was looser in feather. The comb had too many points, and after falling over to the side was inclined to turn upward. The comb is too large to suit present-day breeders.

No. 21 was one of the earliest Leghorns we photographed at New York. This picture is placed in this collection to illustrate a pose peculiar to very nervous Leghorns. The neck just below where it joins the head is much bent, like the upper part of the letter "S." It has an excessive arch and curves in at the throat under the wattles. Nos. 24 and 28 illustrate better poses, the latter being quite the correct form.

No. 20 shows too much of a bend at the juncture of the head and neck. In this head the comb is nicely formed, but falls too limp and close to the face.

No. 31, Group 7, may be said to be just the opposite from the two preceding. The neck is too straight and stiff where it joins the head. The pose makes the bird appear proud, but it lacks the desired graceful curves over the back of the neck. This comb is about right in size. It has an unusually large lobe, which when smooth and as good as in this specimen is highly valued.

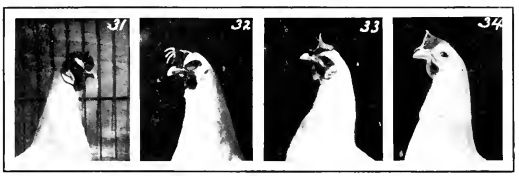
No. 34 shows another long, straight neck, longer in proportion to the bird than was No. 31 and the neck is rather straight in front as well.

Nos. 32, 33 and 34 show nice small combs that approach Standard requirements. When viewed from the side they show most of the base of the comb and the head. No. 34 shows a comb that rises nearly "erect" in front, while No. 32 makes a gradual curve at the front of the comb, the points continuing the curve to their extent, giving a pretty effect. No. 33 has a very small comb that droops hardly to the eye. The second point as well as the first is nearly upright. This head and neck belong to one of D. W. Young's finest breeders and most noted New York winners. She was a hen of clear cut Leghorn style and exhibition quality. The wattles on all four of this group are of show room fineness. In regard to form of heads and beaks, all those in this group are fine. In No. 33 there is a tendency to be perhaps too fine, or "delicate" might express it better.

When the somewhat larger comb is produced on a Leghorn female that shapes itself into a graceful, almost faultless form and shows perfect color in the show room, on an extra fine bird, it is very apt to receive its share of admiration and perhaps the first ribbon of honor. The small single head with the initial "T" is a specimen of this type that won first for D. W. Young in 1908-1909 at New York. There is a persistent feeling among poultrymen, which comes no doubt from experience, that these beautiful large combs when they appear in a standard-bred strain, are an indication of unusual vigor in the egg-producing organs. Many experienced breeders assert, however, that their birds with small standard combs keep up to the highest requirement for egg production. Personally we cannot help admiring such a comb when it is so gracefully formed as this one and its bright color serves to add gaiety to a specimen of solid colored plumage. The wattles of this bird are larger than are considered ideal, but they are in harmony with the size of the comb and are quite symmetrically carried.

No. 22, Group 5, won first as pullet in New York 1902; also won second as hen for Mr. Young in 1903, again in exhibition pen won first at Boston, 1905. As a pullet her comb was quite as attractive as the specimen seen in the initial letter. Like many others, when she aged, the comb grew somewhat coarse. On this head it stood very well in front, even when grown quite large. The wattles are not large enough to balance the comb as they did when the bird was a pullet. The comb seems to have outgrown them. The lobe turns squarely instead of being nicely rounded at the lower edge. The head is of fair length and indicates the length of back and cushion which the hen possessed. She carried her tail moderately low as a hen and transmitted this fashionable quality to many successful winners.

No. 23 presents a front view of a comb that closely approaches standard description. Some fanciers might desire it to be a little smaller, but this style is very attractive on exhibition hens. This pose was photographed when she won first in exhibition pen at Boston. Her comb shows just five well defined points. The front was well up, the remainder bending gracefully over and not falling too



Group 7: Nos. 32, 33 and 34 show nice, small combs that approach Standard requirements. No. 33 being a fine breeder and a noted New York winner.

close to the face. The points are well divided and nicely tapered. The front point is not so well shaped as it might be, being too blunt. The wattles are of proper size to go well with this size of comb.

No. 28, Group 6, is another of Mr. Young's famous winners. Three times she won first at New York and once at Boston. She was a hen of queenly carriage. Her comb forms almost a perfect curve over the top as it droops its five regularly formed points. This comb and No. 23, Group 5, are types that a breeder can depend upon to produce both males and females for exhibition. The ear-lobes and wattles of No. 28 are well set on and nicely formed. The lobe is nearly flat and free fromm wrinkles. The eye is well placed and rounded in shape. The head is deep and well set on a neck handsomely posed. The carriage of the whole head is typically Leghorn in spirit.

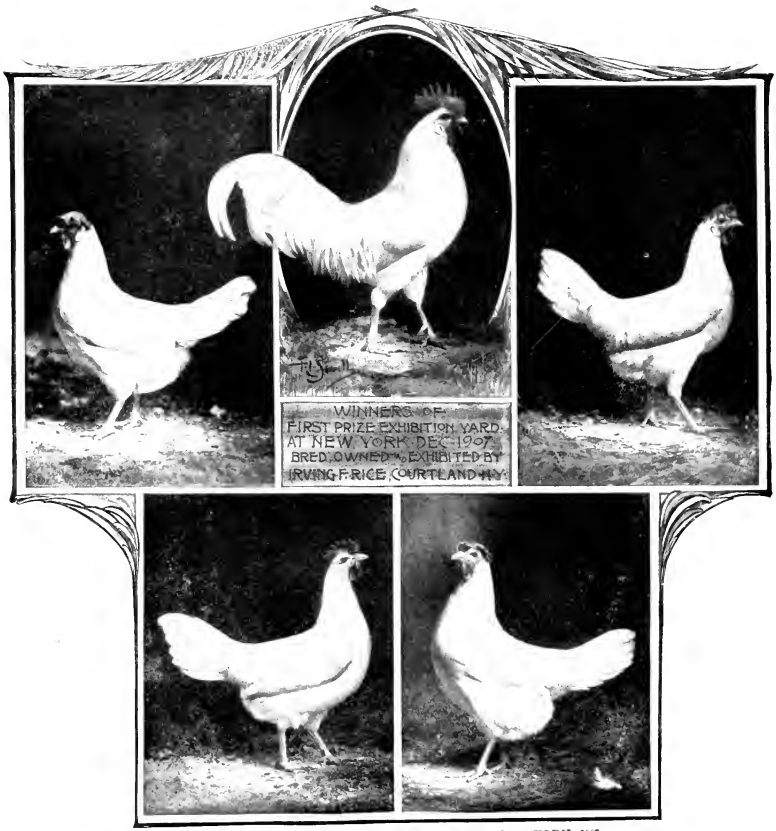
Nos. 26 and 29, Group 6, show two views of a business-like looking hen, although when compared with such heads as Nos. 23 and 28, her head fails in show quality. In No. 26 there is lack of depth of head and face. The eye is more sunken and not so bold. The face and beak are longer drawn out and the comb is not set on firmly, showing a weakness in the form of wrinkles over the beak and breaking down at the rear blade instead of turning over in a gradual curve. The first point is not well defined, taking only the form of an angle and the third and fourth points join as a double point. The wattles drop too straight in front and the throat looks weak.

No. 25, Group 5, is not unlike No. 26 in the form of the head, face and throat, although she appears stronger. The comb is nearer standard, but has six serrations and points. A wrinkle extends across the wattle. The neck is carried with less grace of outline than shown in the majority of this collection. It looks too straight.

Nos. 24 and 30 are two views of a specimen that could carry herself in a pleasing fashion. In No. 24 she shows a really charming pose. The points of the comb are rather

clumsy, the last three or upper points should affect nature top of the comb and it all fall too much over to the head. The wattles are smooth, not coarse, only and well curved in outline as they should be. Too far and drop too low and pointed. They should be a fine clean almond shape, not long and pointed as those are. The neck should show nicer curves as it extends to the head. This indifferent modeling is caused in a degree by the looseness of plumage; the surface of Leghorn plumage should be firm and smooth.

After studying the Leghorn comb we conclude that it is one of the surest trade-marks of high breeding to Standard qualities, and this index of health and productiveness is worn in the most conspicuous place. The gay color of the comb always attracts attention, while the comb itself is often one of the first points of consideration in placing awards, hence the importance of maintaining its beauty and establishing its regularity of size and form appeals to all fanciers who strive to improve, till it nears perfection, the widely popular and profitable Leghorn.



FIRST PRIZE PEN OF WHITE LEGHORNS AT NEW YORK, 1907

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STANDARD BRED S. C. BUFF LEGHORNS

MANZ COLORTYPES CHICAGO

Bred and owned by Monmouth Poultry Farm, J. C. Pauderford, Proprietor, Freneau, N. J.
Reproduced from original oil painting by A. O. S hilling. Represents first prize cock bird and two pullets from first prize pen at Madison Square Garden, New York, December, 1911

CHAPTER V

Buff Leghorns of the Past

History of the Early Importations. Improvement in Type and Color Made by American Fanciers. Results Obtained by a Pioneer Breeder and Fancier with Imported English Leghorns.

Professor W. P. Wheeler

IN REGARD to the Buff Leghorns, I think about the first shown on this side were those in a pen at New York in the winter of 1890-1891(?) These August D. Arnold imported from a dealer in England, and not, I think, a breeder. They were almost anything, however, except buff. That year, soon after the show, I think, he imported much better birds—the best he could get from Mrs. Lister-Kay and others.

In 1891 I imported from the yards of Mrs. Lister-Kay, a male and two females (young of preceding year) for Mr. Bishop of Verona, who bred Buff Leghorns for several years, but did not exhibit. He got stock—or rather eggs—liberally from Mr. Arnold that first year.

As you might expect, very few real Buffs were raised anywhere for several years. Mr. Arnold imported freely for a few years, bringing over in 1892 some of the best exhibition females he could obtain, and a few exhibition males. His later importations were altogether from the yards of Mrs. Lister-Kay, I believe.

In 1892 I imported from the yards of Mrs. Lister-Kay a breeding cockerel for Mrs. Wheeler—the best bird for breeding I knew of, and I still think about the best then available anywhere. He was a very dark bird, almost red, but very useful at that time, being of solid color and fairly even—a combination of not any too frequent appearance. This bird was mated during the early part of 1893 with hens from Mr. Bishop, and later in the season, with a few of Mr. Arnold's best hens—Mr. Arnold and Mrs. Wheeler both hatching chicks from this mating. A few very good colored young birds were grown that year, but of course they were a very small percentage of the total.

Early in 1894 and later I got from England, for Mrs. Wheeler, three more females—one of them a Palace winner of a cup and first elsewhere, an exceptionally fine bird, although better from the English point-of-view than from that of our show rooms. This hen died before any chicks were secured from her, unfortunately.

We did not go outside of the United States again for stock. I helped Mrs. Wheeler in mating and looking after her birds from the first, and later, owing to Mrs. Wheeler's ill health, have taken entire charge of them. We never sold any eggs and have sold no birds for many years. We have kept the Buffs as pure as when introduced into the United States, and we have kept them somewhere near the upper level of the breed, for we keep very few and only breed from a small pen of the best we have. But I have had neither the time nor opportunity to look up, always, satisfactory birds when new blood was needed, so have not bred every time as I should consider best.

BUFF LEGHORN COCK

One of the best colored males ever exhibited at New York. This bird proved his worth as a breeder, being the sire of many winning cockerels and pullets.

Several of the parents—three generations back—of the Buffs I first imported were brought into England from Denmark, I think, about 1888. These were ancestors of Arnold's best birds also. In the earlier breeding of the Buffs the best colored birds as to plumage, came usually with willow or greenish legs, or were of a type not Leghorn, with softer feathering and clumsier shape. Of the progeny those most typical of the Leghorn were given to an excess of white in plumage. In the earlier breeding the males were perhaps better than females, except for the great prevalence of white in tail plumage, and fewer of the males were saved for breeders, of course. It was advised by Mrs. Lister-Kay that late hatching be practiced in May, which was late for England, as the chicks then would follow more closely the better color of the sire. Results were generally in accord with this advice, I believe, and I suspect still hold true for a majority of the matings, when it is followed.

Aside from their interest to the fancier, the Buffs were popular with some poultrymen because of their business capabilities. The Buffs kept by the late Ezra Cornell at Ithaca and by T. E. Sherman at Franklinville, were good egg machines, and Mrs. Wheeler's birds were also. I do not remember how Mr. Arnold found them in this respect.

Mating for Color and Shape

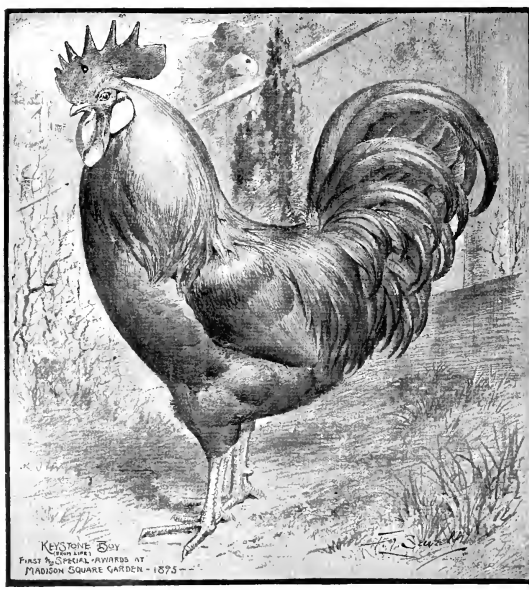
Proper Selection of Breeding Stock to Produce Exhibition Buff Leghorns.

August D. Arnold

PERHAPS no breed or variety of fowls ever had so much opposition as had the Buff Leghorn when first introduced to American fanciers, but today they stand on an equality with their cousins, the Whites and Browns, and score just as high in the show room. The improvement made in this variety since its advent to this country has been phenomenal. No one has noticed this more than the writer, who introduced the first of the birds to the fanciers of America, and has bred and exhibited them for nearly ten years.

The first birds of the variety that ever set foot on American soil were imported by the writer in the fall of 1890. They were put on exhibition for the first time at the Hagerstown fair that fall, and later on at Madison Square Garden, New York. Some fanciers took a fancy to them and predicted a warm place for them in the hearts of the American fanciers, while others saw fit to say all manner of evil against them. Quite a number of our leading fanciers, however, took them up, paying high prices for stock and eggs, and were willing to accept what was on hand as foundation blood. Most of the birds imported at that time were of uneven color, and possessed as much white in tails and wings as they did buff. Many birds had blue, and others willow legs. By a few years' breeding we succeeded in getting black in tails instead of white, which was preferable at that stage of the breed, and in a few more years a great improvement was noticed in color of wings and tail, also in leg color. So that today there are some specimens that come near perfection. Much work is still on hand, however, for the progressive fancier along the line of improvement.

We find very few really good combs in this variety, especially in males, while we find some strains that are off in leg color. We have noticed this particularly where undercolor is ignored. If you would keep the rich yellow leg and skin, watch the undercolor closely. Short legs, squirrel tail, and under size, all must be kept out of our flocks; yet as regards size, we do not believe in breeding a Leghorn up to the size of a Minorca. A fair-sized Leghorn is what should be sought after. Great care should be taken so that two light birds may not be mated together; and always keep in mind the "cotton tails" which the Buff Leghorn was so apt to sport when first introduced to American fanciers. It is much better to breed dark birds together than light ones. Good results can be had from mating medium colors together for a season or two, but it is safe to keep on the dark side. As good a mating as we know of is a lot of females of a dark buff, with a male one shade darker. When we say "dark buff" we do not mean red, but a medium dark.



BUFF LEGHORN COCK, 1895

One of the early type of Buff Leghorn males, excellent in color, but showing the heavy body and large comb of the English Leghorn. The bird illustrated above was bred and exhibited by August D. Arnold, the pioneer importer and breeder of Buff Leghorns in the United States.

The beginner should aim to get his start in any variety from an experienced breeder (one who has made a study of a breed), knowing that culls from such a breeder are worth more to breed from than the best birds from the yards of a breeder who has had very little experience in the variety he wishes to take up. He will also need to learn that off-colored chicks will come from the best matings, no matter how much experience the breeder has had. This is as it should be, for if every bird raised should happen to be a perfect bird, the fancier's work would soon be at an end. The scarcity of the diamond has much to do with its value.

The shade of buff that is called for by the Standard is what so few can comprehend. Even judges seem to differ on this point. In our minds the shade of buff is not

of such great importance, as long as it does not prove either of the two extremes. A medium buff is what we should strive for. Evenness of color, too, is of the greatest importance; all sections should be one even shade.

Very few persons who now have the pleasure to look at the beautiful Buff Leghorn as it appears in our leading shows have any idea of the cost, patience and time it has taken to place it in the position it now occupies in the poultry world. Pardon us for saying that we have spent a small fortune to get this breed before the fanciers of this country. We have paid out many hundred dollars for birds we imported, having paid over $800 for eight birds from the yards of Mrs. Lister-Kay, of England, besides buying a number at prices running from $30 to $75 per head, and nearly one hundred additional breeders, none of which we got for less than fifteen dollars per head.

In conclusion we will say that all real fanciers should be proud of the success that has crowned the efforts of the fanciers in America in improving and getting this valuable variety of the Leghorn family so near perfection. We shall feel ever proud of the honor of introducing the beautiful Buff Leghorn into this country.

Modern Buff Leghorns

Their Great and Growing Popularity. Excellent Market Properties. Improvement in Type and Color. How to Feed, Train and Condition for the Show Room.

J. Courtney Punderford

I DO NOT think there is any variety that has made such rapid strides in the past three or four years as the Single Comb Buff Leghorn. Especially during the past year a veritable Buff Leghorn wave has swept the country from coast to coast.

In corresponding with several of the leading specialists, I find their cases the same as my own: they are absolutely unable to fill orders for eggs and breeding stock, the demand far exceeding the supply in all instances. I have been refusing orders for the past three months.

Now, fellow fanciers, "where there's smoke, there's fire," and where there is a demand for a certain variety so large that orders are being turned away the country over,, I think you can safely say this particular variety is making good and the public is waking up to the fact that it has been losing a good thing and it is getting busy in order to procure this good thing as soon as possible; hence the shortage.

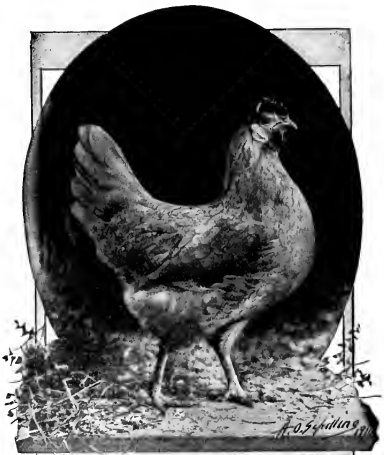
A statement of some of the qualities on which we Buff Leghorn cranks base our claims, will not be amiss.

First, they are the hardiest of the Leghorn family, inheriting a rugged constitution from their birthplace, Denmark. They are less susceptible to the general ailments of other breeds and one rarely finds a bird out of condition. They mature very fast and if hatched by hens are soon able to shift for themselves. Both as chicks and as matured fowls, they require much less feed than the Whites, Browns and other varieties of Leghorns. I have found that they will lay farther into the molt and will start sooner when coming out than the Whites. It is an acknowledged fact that they will breed truer to color than any other buff variety. For broilers "they are it," making a one or one and one-half pound broiler quicker than any variety I know of. They dress a beautiful shade of yellow, so much desired in our high-class markets. They lay a large, pure-white egg and "are on the job" month in and month out. Some visitors, when here buying stock or eggs for hatching, have said: "I do not wish anything but utility stock, for I have been told exhibition birds do not lay as well, being bred too fine."

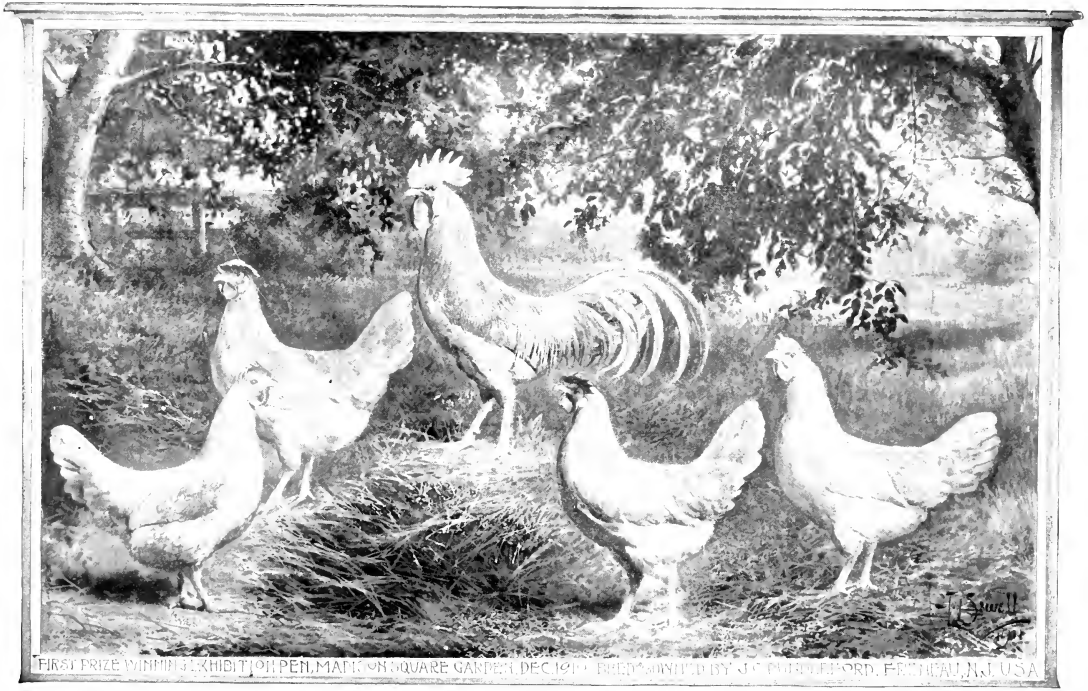
For answer I take them to my breeding house and show them the egg record of my first Buff Leghorn pen at Madison Square, 1909. There are six females in the pen and in the month of March they laid 130 eggs. Needless to say, I usually make a sale of exhibition stock.

There are two things which Buff Leghorn breeders have to improve; first, head points; second, tail carriage.

Going through this class at New York, Philadelphia and Boston, you find the males very apt to be coarse in comb. They are large and beefy and the back of blade falls over; they also show heavy thumb marks. The tail carriage is apt to be too high and the tail not fully furnished, having a pinched look. I would like to say here that I am not in favor of the other extreme, i.e. the tail carried almost horizontal with the back. I believe there is a happy medium, and when we have our males with tails horizontal with their backs we are getting away from



The Buff Leghorn hen illustrated above distinguished herself by winning both the color and shape specials at Boston, 1910.



Winning Buff Leghorn Pen, New York, 1910

The world over the Leghorn proves its profitable egg producing power as the cattle of the Channel Islands have proved their ability as producers of butter. J. Courtney Punderford, Frenchtown, N. J., has done a great deal for the beautiful Buff Leghorn. He has bred thousands of the finest type and finest quality and has exhibited the best collections of this variety that have ever appeared in Madison Square Garden, New York shows. Three times consecutively he has won the first honor on exhibition pen, the above group being the third pen to win first and to prove the breeding quality of Mr. Punderford's celebrated strain

the true Leghorn type. For myself, I think the ideal carriage is a trifle less than forty-five degrees. That is what I am trying to produce in my males.

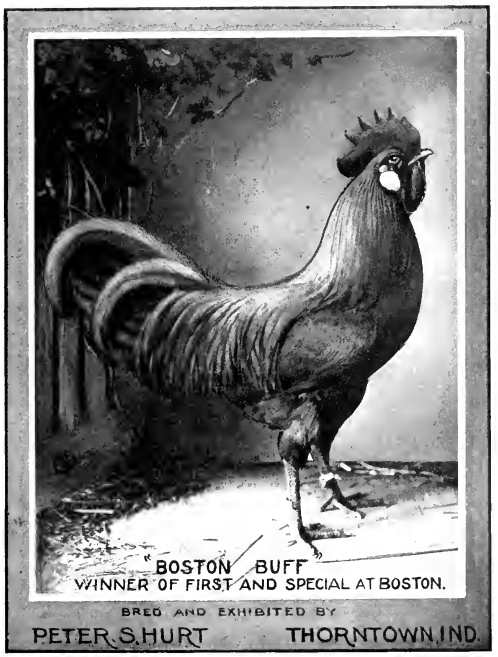
We cannot be too particular in mating, for on this depends the success or failure of a breeding season. It is much better to have three breeders, all having the required points, than ten in your yard with off-colored feathers, bad combs and general defects. There are two considerations to have constantly in mind—type and color. Select your male which is to head your pen and have him as near the Standard as possible. A good five-point comb is best; not having this, select a four-point comb, but do not go below four. Have the comb set firmly on the head so it will not tend to lop and avoid thumb marks. Do not have the comb follow the neck, but stand well out from the head. You want a good, full-rounded breast and a nice curve from base of comb to top of saddle feathers and then following with easy curve over with sickle feathers. Have him well up on his legs; avoid short shanks, for many a good bird otherwise has been turned down by the judge on this account. Never pass a male with decided white showing in tail or wing feathers; a little smoke in tail is not a bad defect in the breeder, but of course a clear tail is the thing. Have as deep a bay eye as possible. An even shade of buff is desirable with no decided red on wing-bow or back. Be sure to keep away from the red shade, as so many breeders' birds of true Leghorn type have the Rhode Island Red color. Now select your females to fit in with your males and have them strong where your male is weak. Be sure of this as it will help to counteract his faults in the offspring. Do not use females having shafting or those much lighter or darker than the male, otherwise mealiness and off-colored youngsters will be the result. Have their combs neat, folding over to one side, and their tails full and carried with a nice sweep from the back. A good, full-tailed female is a great asset in the breeding pen.

With these facts clearly in mind, I do not think one can go far wrong.

Raising Winners

The care of the young stock is of great importance. I believe the conditioning of a show bird should start when it leaves the shell, not two or three weeks before the show.

Buff youngsters demand shade and plenty of it. If they are exposed to the summer sun day in and out, when matured they will have a faded look, not having the same lustre as chicks that have had shade and green runs in which to grow. Do not allow your young stock to be chilled or overheated, for should this once happen they will not mature the way they should and you will have runts and sickly birds on your hands. Keep them scratching all the time; better have them a bit hungry than fully satisfied. When early fall comes select your choice specimens and put them by themselves, so that they will not run any chance of breaking feathers or getting into fights, the result being torn wattles, marred earlobes, etc. Very choice birds—those which look like the "real thing"—I put by themselves in nice grassy runs with plenty of shade. Only by these careful methods can one hope to win the coveted blue at Madison Square or other leading shows. Condition is half the battle.



S. C. BUFF LEGHORN COCKEREL
A Buff Leghorn male of the modern type in length of back and carriage of tail and sound in surface color

Care of Old Stock

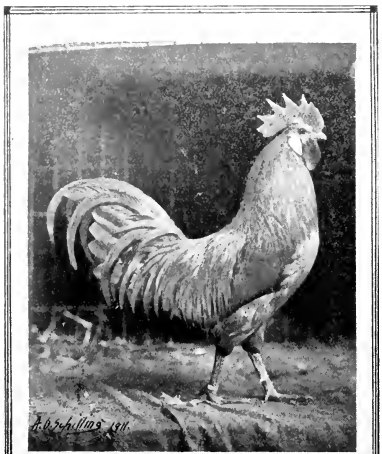
The care of your old stock is just about as important. As soon as the breeding season is over, I take the males away and put them in a house which I have built especially for them. Each has a nice grassy run which is entirely covered by burlap so the sun cannot reach him. There is a small roosting room 3x4 feet with a burlap window. A three-foot board fence separates the runs so they cannot fight over it and injure each other. A foot wire is on these boards and all the top is covered. Their legs are looked after each week, so as to keep the scales soft and in good condition, in order that they may shed them easily. With this careful attention your old stock will be as fresh and will have

as fine an appearance as your youngsters when fall arrives.

Your choice females should be treated in the same manner. From what I have seen I am sure that many breeders neglect this careful handling of old stock when the breeding season is over.

Conditioning for the Show Room

The conditioning of Buff Leghorns for our big shows begins when the chicks leave the shell; with the old stock, when the breeding season is over. Chicks hatched from prize matings—they are the ones from which you expect


FIRST PRIZE BUFF LEGHORN COCKEREL, WINNER OF
SHAPE & COLOR SPECIAL, MADISON SQUARE GARDEN 1910.
Bred & Owned By
Wm. H. HEIL R.F.D. #3. EASTON PA.

A beautiful Buff Leghorn male in color, being an even golden buff over neck, back and wing-bows; tail and wing feathers solid buff. In shape this bird is excellent, coming very close to the advanced type of the modern White Leghorn male.

your next season's winners—ought to have extra care as soon as hatched. Put a hen with some young ones in a large grassy run with plenty of shade, for Buffs must have grass to run on and plenty of shade—the grass to keep their legs yellow and in good condition and the shade so they will not be bleached out when fall comes.

When the chicks are about four months of age, select the choicest specimens and put them by themselves. Do not allow a very promising cockerel to run with a large number of males, as he is likely to lose a sickle, have an ear-lobe torn or some such accident which would mar him. Separate your pullets and cockerels as soon as possible. When the show season comes around, select the pullets and cockerels which you have had in mind and put them in your conditioning room, selecting three or four more than the number you intend to show; as often one or more birds will go back at the last moment and then you will be short a male or a female. I usually put my birds up a week before the show, as I find in that time I can have a bird about right. Begin by walking past the cage and speaking to the birds. Do not start at once to handle them, for if thoroughly frightened at the start it is a hard matter to train them and training is half the battle. When they become accustomed to your presence and voice, stop in front of the cage and pass your hand over the outside until they become quiet; then open the door and gradually get your hand near them. After awhile they will allow you to smooth them and then I begin the course of posing; that is, having them stand wherever you place them with the head in any position you wish. You would be surprised how much little things count with a judge. A well-trained bird often catches the judge's eye, even if it is a bit inferior to the one in the next coop that is untrained.

The toilet of your birds is a most important factor. I spend one-half hour each day on each bird. With a silk handkerchief, beginning from the base of the comb, I rub down with easy motion, covering every portion of the bird. By the week's end the bird has a beautiful luster. The legs are washed several times and every particle of dirt is taken from beneath the scales. A very little sweet oil, with a few drops of turpentine, is used to rub the legs after each washing. This brings out the rich yellow. Be careful not to rub too far up on the shanks and stain the feathers.

Before shipping look over the shanks and webs well for stubs. Treat the comb with a very little oil and then rub it well. Before putting the birds in the shipping coops I give each a two-grain quinine pill. I find this is excellent to ward off colds. The shipping coops are made of light wood and the inside is lined with muslin to keep off drafts or any dirt which may sift through the cracks. Muslin also covers the top under the top slats. One cannot be too careful of birds in transit.

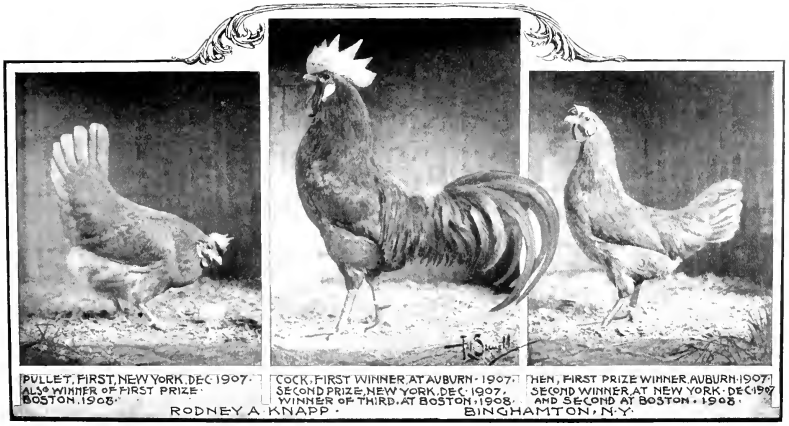
Feeding Show Birds

The feeding of your birds while in training quarters is quite a problem. I give them three meals a day. The morning meal is a little scratching feed. At noon they get a mash just moistened with scalded milk, at night, cracked corn. During the day when training them I give small bits of fresh meat or some green food. You will find they will always be at the door expecting this or that dainty. Never leave food in the cups. Give them a certain time to clean up their feed and if any is left take it away. Many a bird has gone stale on his feed by having it left before him.

Conditioning Old Stock

Now a few words about conditioning the old stock. As soon as the breeding season is over I take the males out of the breeding pens and put them in a cockerel house. Each pen has a grassy run and the top is covered with burlap so the sun cannot get on them. During the time they remain in this house their legs are treated each week in order to keep them in good condition and to make it easy for them to shed their scales. The prize hens are treated in the same way and when fall arrives and you take the males and females out of summer quarters you have birds with beautiful plumage, not bleached out by the sun, with legs in fine shape and in sound physical condition.

The toilet of the old stock while in the conditioning room, is the same as that of the youngsters.


PULLET, FIRST, NEW YORK, DEC 1907.
ALSO WINNER OF FIRST PRIZE
BOSTON, 1908.
COCK, FIRST WINNER AT AUBURN - 1907.
SECOND PRIZE, NEW YORK, DEC. 1907.
WINNER OF THIRD, AT BOSTON, 1908.
HEN, FIRST PRIZE WINNER AUBURN 1907
SECOND WINNER AT NEW YORK - DEC 1907
AND SECOND AT BOSTON - 1908.
RODNEY A. KNAPP - BINGHAMTON, N.Y.

Trio of Buff Leghorn Winners.

Buff Color Breeding Problems

Looking to Nature for Instruction in Breeding Buff Plumage. Too Much Importance Attached to Undercolor.

Ezra Cornell

MY EXPERIENCE with Buff Leghorns has been entirely different. I came into possession of my first Buffs more by the result of circumstances than through any real desire at the time to breed them. They were an inferior lot of birds, but I kept them and gradually became interested in the breed. I bred and exhibited them five years before I was able to win a single first prize with them at New York. It probably cost me more to improve these birds than it would to have started as I did with the Whites, but on the other hand I undoubtedly got a good deal of experience in breeding them that I would not otherwise have gotten, so it is a question, after all, which of the two ways of starting is, in the long run, the cheaper and better for a beginner.

What I have written on Whites relates equally well to Buffs, excepting of course the refernce to color of plumage. First let us see what the standard requires for the female plumage. "Surface color throughout one even shade of rich golden buff, free from shafting or mealy appearance, the head and neck plumage showing a metallic lustre of the same shade as the rest of the plumage; undercolor a lighter shade as free as possible from all foreign color. Other things being equal, the specimen showing richest undercolor shall receive the preference."

The best buff color to be found today is on the Buff Leghorn females. No other breed of Buffs is so absolutely free from all foreign color or possesses a more even shade of buff. The Buff Leghorns have more of a metallic lustre than the other Buffs, which gives them a slightly different appearance, but it is due to their having harder, closer fitting feathers. Many breeders have been much retarded in getting a fine plumage by laying altogether too much importance on undercolor. They would have been, in many cases, far better if they had never considered undercolor at all. A bird with a smoky or foreign undercolor should be discarded, but aside from this it is hardly worth considering. The best Buff Leghorn females I have ever seen, both for exhibition and breeding, have had the lightest undercolor. The Standard says, "Other things being equal, the specimen showing the richest undercolor shall receive the preference." (The word "richest" is usually translated in this case to mean darkest). This may be all right, but be absolutely sure that other things are equal before giving a deep undercolor any preference or consideration.

Leghorns have comparatively hard, close fitting feathers. In such feathers the coloring matter always concentrates in the surface or harder part of the feather; this is according to nature and you cannot change it. Look at some of our most highly colored wild birds—the Scarlet Tanager, the Oriole, or even the Canary, and you will find an undercolor which appears white in comparison to the surface. Take these same brilliant feathers and lay them in the sunlight over a darker undercolor and you will deaden the color. The rays of light pass through the surface plumage, and on striking the light undercolor are reflected, much intensified, which gives the plumage its extreme brilliancy; whereas if the rays of light on penetrating the surface were to strike a dark undercolor, they would be absorbed and the surface color deadened. There are three ways of deepening undercolor, all of which are undesirable in the case under discussion. First, by deepening the surface color, which is merely overloading the plumage with coloring matter; second, by loosening

up the feathers and getting a more fluffy plumage; third, by getting a mealy surface; which is nothing more or less than a separation of the primary colors which combine to make buff and which must be thoroughly blended if you are to get a good buff. That I have just written applies especially to the females; the males have a deeper undercolor, but it is not so apt to be solid. Cockerels are sometimes found with some white in undercolor of hackle, which, as the bird grows older, will probably appear on the surface. A male bird should have sound undercolor. This is important, although it makes little difference whether it is light or dark. The shade will, as a rule, correspond with and depend on the shade of the surface color. Many of our best Buff Leghorn males for stock purposes have a rather dark, a smoky color in the hidden web of the main tail feathers. Many seem to think that this is essential, although I can see no reason for it; some of my birds have it and some have not. I am unable as yet to say whether it is of any importance or not, but if a bird is otherwise good, I care but little whether or not he has a slight smoky cast in the hidden web of the main tail feathers. The best Buff Leghorns I have owned and known have, like the Whites, been produced by Standard matings.

Buff Leghorns for Show and Table

Inbreeding Necessary to Fix Desirable Characteristics. Temperament of Birds Depends Much on Attendant. Details in Breeding for Exhibition.

William H. Bushell

JUST a few words to the beginner in breeding Buff Leghorns. First get good stock or eggs from a reliable breeder for your foundation. If you start right you will go right. In mating up your pens for breeding, first pick out a good male bird with an even golden buff surface color with some bronze feathers in tail color, the bird to carry tail rather low; comb as near five points as you can get it, with broad base and standing erect, back of comb to be well clear of neck; lobes white and as free from red as possible; also a good yellow leg and the bird to stand well up on his legs. We cannot get all the good points in one bird, but we must get as near as we can and then make up the defects with the females. I like to breed from birds with clear buff wings, and hackle clear golden buff clear down to the skin, then you may expect good young stock and you will not be disappointed. In picking out the females to go with this male get them as near an even color like the breast of male, with good combs and lobes and yellow legs; wings clear buff, but if you are breeding to a light colored male some dark bronze in wing feathers will do all right, in fact it is best to breed both ways; in using two pens a person can do that. Now the females to go with the dark-tailed male may have the tips of tail feathers a very light buff, almost white. I like a good, deep undercolor in females, and in the dark male a very strong undercolor. In using females with some very light buff feathers in tail tips I keep the smut away and produce the rich golden buff. When you have a pen of good old birds keep them to breed from and save some of your very best pullets each year to breed from after they are a year old, then you will get good, strong chicks and eggs that will hatch in the incubator. By the way, that is the way to hatch chickens and beat the lice, but you must go still further and raise your chickens in a brooder. So many people make the fatal mistake of giving the chicks over to the hens to raise; do not do it. We have not had to use any kind of louse destroyer now for two years, and my birds are free from lice. We do not let a hen sit on a nest over night, but provide good dust baths for them, and they will take care of themselves. If you have a good male bird that just suits you and you want to stamp his good qualities upon your flock, breed him back on his pullets, even to the third generation. I have the finest male bird I ever saw, and have refused a very high price for him several times; he wins first money wherever shown; he is just a grand bird, and I have bred him back to his pullets to the third generation, and his get have always won their share of prizes and the top prizes at that. This year is a surprise to me and all the breeders who visit my yards. The young stock are even in color with good Leghorn shape, and very few culls. We cannot get enough culls for our table. Some people claim that Leghorns are wild, that you cannot keep them inside a ten-foot high fence; I keep mine inside a four-foot fence. It is the people who handle the birds that are wild. Go among your birds quietly and feed them out of your hand little knick-knacks. Teach them from the start that you do not intend to hurt them, and do not try to catch them to show to everybody who comes your way. If you take a stranger into your yards with you, you go first and take some food they are fond of, and get your chicks all around you and show the people how nice and tame your birds are.

Now a few words about Buff Leghorns as winter layers. I consider them the best winter layers we have had. To get eggs in winter, in the first place you need a good, tight house and plenty of room for them, with a scratching room partitioned off, and a dust room. I give fifty pullets a house eight by twenty-four feet, divided into roost room, scratching room, and dust room. I renew the straw once a week in the scratching room, and I do not let my birds go outdoors all winter. After they are housed a week they stop fretting and start to laying. If you let them run out every good day, and shut up stormy days it keeps them restless, but to keep them shut up all the time, they lay regularly. We feed wheat in the morning and raw vegetables at noon and a mash of coarse beans and oats and some wheat, mixed with a pint of meat meal to fifty hens. This we scald at noon and feed at night. We scatter a few handfuls of millet seed in the straw once a day, also feed some alfalfa hay or clover twice a week, and give warm water to drink. One thing I do like about the Leghorn pullets is, the more you fuss with them in the winter the more eggs you will get. I do not think you can get a Buff Leghorn pullet too fat if you will see that they keep their food eaten up clean. You need not worry about not giving them a light feed at noon. My observation is with them if you want eggs feed for them and keep the house just warm enough so the pullets' combs will not freeze, and my way to do that is during extreme cold weather, shut off the dust room part; that makes less room for the birds to keep warm. Just a word about the table qualities of the Buff Leghorn. They are not surpassed except by the Indian Game. You will never tire of their meat. We can use them three or four times a week and still be chicken hungry for the next one.

CHAPTER VI

Black Leghorns

One of the Most Popular Varieties of the Leghorn Family in Europe—There it is Bred Extensively for Egg Production—Bred Principally for Exhibition Purposes in England and America.

THE following brief but comprehensive description of Black Leghorns was written by R. C. Haeger and appeared in a former edition of "The Leghorns:"

"Black Leghorns were first imported from Italy in 1872 and admitted to the Standard in 1870. Although not bred extensively until the last three or four years, still they are forging their way to the front, and I see no reason why they are not equal to any of the other Leghorn varieties, while in some things I think they surpass all others. Their plumage being a black throughout does not soil as easily as that of any other color. Unlike most black fowls, they are fine for table use, dressing yellow, and the flesh being of fine quality.

"As to fancy points, the Black Leghorns are exactly like the Browns and Whites in symmetry. The plumage should be a glossy black, although we find a great many a dead black, which should suffer a cut for color. Breeders should be careful of color of eyes, because I think Minorca blood has brought in not alone dark eyes, but also black shanks, coarse heads and shape of body. What would Franklane Sewell think of a Langshan with a bay eye? Although judges do not cut as frequently as they should on color of the eyes, still I think it is of great importance.

"Another question among the admirers of this variety is, color of shanks. When first admitted they were to be yellow, but finding they could not get as bright yellow as they wished, this was changed to the black. Then again they were changed to yellow or yellowish black, and that is what the Standard now calls for. In regard to this argument, I will say that I do not try to breed yellow shanks, first, because I do not think a solid yellow shank belongs with a black plumage. None of our other black varieties call for yellow shanks. Then why call for them on Black Leghorns? Second, because I know that nine-tenths of yellow-legged Black Leghorns either throw off-colored feathers while chicks or when they molt out as fowls. The best of them will do this, and that is my principal reason for not trying to breed yellow shanks.

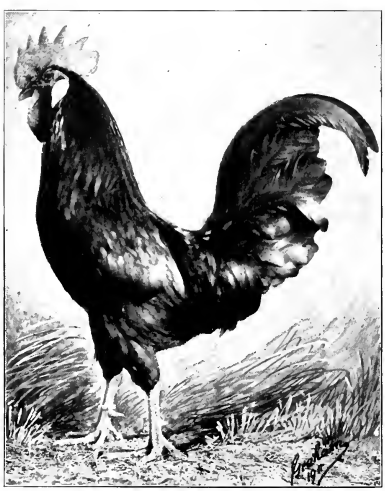
"I hold that the only color, and the proper color for their shanks should be a yellowish black. I do not mean by this that they should have a slaty black, but a bright yellowish black on the shank, with the upper side of the toes and the lower side of the toes and feet a pure yellow. By breeding the shanks and toes this color, we can keep the plumage and other sections where they belong

"I think this question ought to be brought before the judges as well as the breeders, for a careful consideration, as hardly two judges cut alike on the color of the shanks. I have score cards by several of the best judges, and only two so far, have taken a yellowish black as standard color. Some would cut half a point, while the next one would cut one and a half points. Now while the standard calls for a yellow or yellowish black, I can not see why a yellowish black is not as near perfect as yellow but there are judges who do not think that way.

"I would like to hear what the judges, as well as breeders, have to say about this, as it should be settled, so breeders may know what to aim for in breeding, as well as to know what to bring out in the exhibition room."

In view of the above expressed opinion relating to the color of shanks, it will be interesting to read what Adam F. Noll, one of the most successful breeders of Black Leghorns in America, has to say regarding yellow shanks on Black Leghorns. Mr. Noll writes:

"The Black Leghorn when first discovered had dark or willow shanks, but by careful breeding they are today



BLACK LEGHORN COCK

Reproduced from a photograph by L. P. Graham. The male illustrated above, while rather coarse in comb and lacking a well furnished tail, is nevertheless a fine type of the variety, his color being most excellent, as the light and shade of the picture shows.

seen with solid yellow legs. I have bred them for nearly twenty years for eggs and for the show room and know that S. C. Black Leghorns are one of the best varieties both for utility and show room bred today. They are a variety that do as well in confinement as on free range. The cost of feeding is not so large as the heavier breed.

"They are heavy winter layers when eggs are high in price and make a good plump fowl when dressed for the table. They always look clean in the pen, for being black, they do not show dust or dirt the same as light feathered fowl. When hatched they are strong and healthy, grow-

ing rapidly to maturity, will have wing feathers in one week and start to lay in about five months, a nice size egg with white shell and good flavor.

"They have red combs, face and wattles, pure white almond shape lobes, rich glossy black feathers and bright yellow legs, a sight which is pleasing to the eye, so you make no mistake when you start to breed Black Leghorns."

Black Leghorns in England

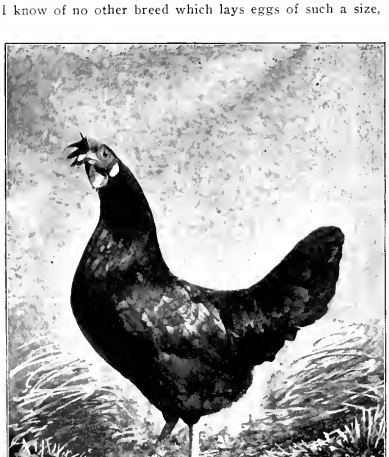
Rev. T. W. Sturges, is one of the leading authorities on poultry culture in England, furthermore, he is a great admirer of the Black Leghorn fowl and in "The Poultry Manual" the newest and one of the most complete books on poultry culture before the public today, Mr. Sturges, the author, devotes considerable space to Black Leghorns from which we take the liberty of reprinting the following pertinent and interesting paragraph:

"This is one of my prime favorites, and after twelve years' persistent breeding it still holds first place. I know of no other variety which combines so many good qualities. It is still a popular fowl, and though it has suffered like many others from the fierce competition of the newer breeds, it still holds its own.

"Apart from its beauty as a study in broadcloth and gold like a gentleman in evening attire, it has an elegance of its own, and is as typical in its form and as noble in its carriage and outline as any of its numerous relatives.

"The foundation of its success, however, is its superexcellent character as the premier egg-producer of today. It would not be difficult to raise birds which would average 200 eggs apiece in the year, and I have often had individual birds to exceed this figure, and, next to the Black Minorcas, I know of no other breed which lays eggs of such a size, except the exhibition White Leghorn. The average weight is seven eggs a pound, and often six will weigh as much. It is true they are white and have to overcome the English prejudice for tinted eggs, but their size and quality easily accomplishes this, and as the birds are as hard as nails, and will lay well in the winter, and do well in confined quarters, they lay when 'eggs are eggs' and in great demand.

"That they can hold their own in competition with all other breeds is shown by the fact that, at our great International Show, they have more than once carried off the trophy for the best fowl of any breed in the competition against 4,000 others of all breeds and colors.



BLACK LEGHORN HEN

Reproduced from a photograph by L. P. Graham. A beautiful hen in head points, with good length of body, well set tail. Plumage a lustrous greenish black.

Purity of Descent

"The Black Leghorn is of pure Italian blood, and has long been known and bred in Italy, as well as in Germany, Switzerland and Belgium. Some of the best are found today in Belgium, while the rank and file are a common sight throughout the Continent. They were known in America at the same time as the White and Brown varieties, but were neither 'made' nor introduced to us from there. In 1881 I saw them by the thousand dotted here and there over the whole of Switzerland, and again in 1886, in Germany and Belgium as well. Shortly after this period they were known and exhibited in England, and some of the best were imported from Belgium. In their original home fanciers are few and far between, and the birds run wild, and, for the most part, uncared for. They are small birds, naturally, under such conditions and as wild as sparrows, but prodigious layers. I found them in all altitudes, from the borders of the Italian lakes in perpetual summer to the highest mountain passes amid the eternal snows, and they seemed to thrive alike in all.

Their Improvement

"With the additional care and feeding bestowed upon them by expert fanciers, and care in selection, they soon began to put on extra size and to improve in color. But many of them, even in the exhibition pen, had dusky legs and stained ear-lobes, with very indifferent head points, while nearly all the males showed white in the tail sickles. As classes began to fill better, and the Blacks began to assume gentlemanly attire, general attention was attracted to them, and fanciers of the older and better-known breeds began about 1900 to take them up and set about to improve them. * * * * * *

"Character and type were lost in a great degree, and this has been most noticeable during the past two or three years, while the angularity of the Minorca has displaced the rotundity of the Leghorn. As the birds gained in size they lost much of their alert and sprightly carriage, and in some measure their hardiness. Some Blacks shown last year almost rivalled the White Leghorns in size. This is a pity, and if continued will spell decline, if not decay, in a vigorous and useful race.

"So far as I know the infusions are all of Mediterranean blood, although traces of feather on the shank occasionally point to a touch of the Langshan, which may have crept in, mingled with the Minorca blood. These changes are only confined to a few breeders, and Blacks of the true Leghorn type are still found in hundreds of fanciers' yards. The Black Leghorn has so much good in its foundation qualities that all that was necessary could have been evolved without this 'haste-to-be-rich' admixture and care will have to be taken lest the essential features die.

Silver Duckwing Leghorns

One of the Handsomest and Most Useful Varieties of the Leghorn Family.

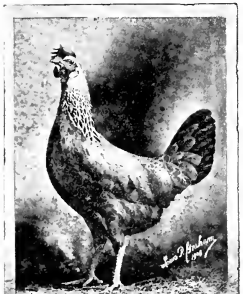
J. H. Drevenstedt

Editor's Note:—We use the name "Silver Duckwing Leghorns" instead of the American Standard name of "Silver Duckwing", for the reason that the word "duckwing" is universally used when speaking or writing of this new variety. The reason for dropping it from the Standard was to have the Leghorn variety distinguished by the color name only, which in the case of the Duckwing Leghorn is a mistake, in our opinion.

SINCE their introduction in the United States, less than twenty years ago, Silver Duckwing Leghorns have virtually remained at a stand-still, as far as any public interest in them is concerned. The few breeders in this country who bred and exhibited Silver Duckwing Leghorns did their share to improve the variety to a point where in characteristic shape and graceful carriage, they rivaled the best specimen seen in the White variety, the winning females at New York being especially fine in type. But notwithstanding the beauty of form and color markings, they never became as popular as their excellent qualities deserved.

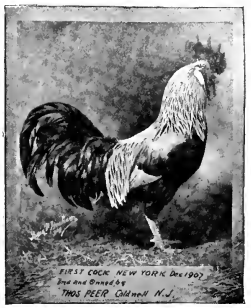
Of their early history in America, very little has been said or written since their appearance in the show room in the early 90's. Mr. J. W. Fiske of Passaic, New Jersey, one of the pioneer breeders of Silver Duckwing Leghorns, in this country and a most successful exhibitor of them at the lea ing shows, kindly furnished us with the following data.

"In reference to the Silver Duckwing Leghorns, would say that in October 1893, I purchased four Silver Duckwing Leghorn pullets from a party in Massachusetts. From another party, whose name and address I cannot recall at the present time, I purchased a Silver Duckwing Leghorn cockerel. In November, 1894, I purchased two more cockerels from a party by the name of Hurd in Massachusetts and in March, 1895, one cockerel from a party by the name of Hanchett in Westfield, Mass. My experience with this breed has been quite limited, although I had quite a number during the ten years that I kept them. I found it very difficult to raise first-class birds and thought that I would import some eggs from England. In February, 1895, I ordered three dozen eggs from Mr. H. Hesford, St. Johns, Eng., and three dozen from Mr. H. Hinson, St. Ives, Eng. From these eggs, I hatched six chickens; three only, lived. The result, of course, was very discouraging and I wrote Mr. Hesford and he sent me another sitting of eggs, but only two chickens were hatched. These did not amount to much and both died very shortly. I then ordered in October, 1895, a trio of Silver Duckwing Leghorns and a pair of Golden Duckwing Leghorns from Mr. Hesford. They were received in good order. I exhibited a pair of Golden and a pair of Silvers in Boston in January 1896; the Golden Duckwing cockerel caught cold and did not recover. I raised quite a number of Duckwings and disposed of nearly all, sold quite a number of eggs, but a number of the people to whom I sold the eggs complained that the chickens did not show good color, when matured. I bought the entire stock from a party by the name of Fuller in Allentown, Pa., and exhibited, from time to time, in Boston, New York and local shows, but the competition was not very keen; not more than two or three at the most, competing. I probably won my share of blue ribbons and was very much interested at the time, but the last few years I have had very little time to devote to poultry raising and sold the entire lot about eight years ago. I trust what little information I have given you will be all that you require and am very sorry that I cannot give you a better account."



SILVER DUCKWING LEGHORN HEN

A very good model of the active, sprightly type of Leghorn female, the body lines being very graceful.



SILVER DUCKWING LEGHORN COCK

A male of good type, but does not show the characteristic Leghorn carriage of the body and neck, owing to the rather low pose of the bird when photographed.

Thomas Peer, Fairfield, New Jersey, has bred Silver Duckwing Leghorns for quite a number of years, and being a successful and experienced breeder of Buff, Brown and White Leghorns, Mr. Peer's opinions on the comparative values of the different varieties are entitled to considerable respect, consequently we submitted a number of questions to him, to which Mr. Peer sent the following answers:—

1. How do Duckwings compare with other varieties of Leghorns as layers?

I have bred White Leghorns and Browns and Buffs and I know from my personal experience that the Silver Duckwings are just as good layers as any of the other varieties. Mr. E. G. Wyckoff told me that the Silver Duckwings were the best layers that he had on his place.

2. Do Duckwings breed true, i.e., do they reproduce as large percentage of exhibition males and females as Browns or Buffs?

I can honestly say that the Silver Duckwings breed more true than the Buffs or Browns and produce a much larger percentage of exhibition males and females.

3. Is it necessary to use double mating to produce both exhibition cockerels and pullets or can both be obtained from single matings?

Last year I used double matings, this year I did not and I find that I have just as many good chicks in proportion to the number hatched as I had with the double mating.

4. Do you think it correct as well as beneficial to the variety, to have hackle and saddle feathers strongly striped with black?

I like the hackle and saddle sections strongly striped with black, but I cannot say for a certainty whether it is correct and beneficial to the variety. I know that I have a larger percentage of well striped ones than I have of those that are not well striped.

5. Do you think Duckwings will become as popular as Browns when their good qualities are better known than they are now?

Yes I think Duckwings will become as popular as the Browns when their good qualities are better known. They certainly are very pretty and will average more pounds to a flock than most any variety of the Leghorns. They are great layers and great foragers. They certainly are a fine table fowl and they dress nicely, the skin being very yellow.

When Mr. Wyckoff imported the Silver Duckwings in 1905 or '06 the birds were very coarse in comb. Have overcome that fault to a very large degree so that now nearly every male bird has a small and perfect comb.

I bought eggs from Mr. E. G. Wyckoff at $15.00 per sitting and from this stock I established my strain which is second to none in this country. My stock is far superior to any that Mr. Wyckoff ever had and I know that any one who starts in with the Silver Duckwings will never be sorry.

Red Pyle Leghorns

First Exhibited in America in 1900, but Bred More Extensively Since 1909—How to Mate and Breed for Standard Color. Valuable as Egg Producers.

George E. Howell

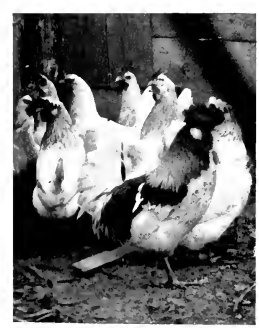
IT IS ten years since the Red Pyle Leghorns came before the public. To an English Leghorn fancier belongs the credit of originating them. Five years later they made their appearance in America, being shown at Madison Square Garden by several exhibitors two years in succession; and then they seem to have dropped out of the running until the 1909-10 show, when they again made their appearance at the Garden.

Not being assigned a regular class, they competed against all other non-standard aspirants for public favor. The even type of these birds, their "classy" appearance, and the strong evidence of their useful qualities, won for them every first and second prize in the class to which they were assigned.

There is nothing similar to the color of their plumage, excepting the Pyle Game and Game Bantam, and to see a pen of these busy and active birds with the sun's rays full upon them is a picture for a painter. The rich coloring of the male flashing in and out among the brown-breasted females as they scratch in the litter in the pen, is a pleasing sight to any fancier.

One of the greatest points in their favor is their ability as winter layers. They do not mature so quickly as the Browns, Whites or Buffs; being a pound or more heavier in weight; but when they get started about November first, there is nothing in the shape of cold weather that will discourage them. Their eggs rank well in size, being equal to some Minorca eggs, as large as the best Buff Leghorn, larger than the White, and nearly as large again as the Black, Brown or Duckwing eggs. The color of the shell is transparent white.

There have been articles appearing in praise of the various varieties of Leghorns, different writers lauding their favorite variety of the breed and crediting it with all the virtues and none of the faults of the other breeds.



BREEDING PENS OF RED PYLE LEGHORNS
Owned and bred by George E. Howell

All who have bred each variety of Leghorns know these claims cannot be and are not real in fact. No one variety of Leghorns has all the virtues. Their mission in life is to lay a large number of eggs, and they all fulfill that mission—some more than fulfill it, others less.

It is not the object here to make any claim for the Pyles that cannot be realized in breeding them. Game blood, undoubtedly, was used in creating them, and it is useless to deny it, as common sense must teach one that the Pyle markings could not be obtained in any other way. When dressed for the table this fact becomes more apparent by the appearance of the carcass. The skin is a rich golden yellow that looks like butter, and the carcass is plump and round, giving it a first-rate table appearance. Pullets will weigh four pounds with the head and feathers off, cockerels five, hens five, and cocks six.

Now, to my way of thinking, this is an ideal general purpose fowl, large enough for the table and of a quality to tempt the epicure. The eggs are white in color and are large enough to be especially selected; and they can be had in winter when most sought after. The plumage is rich in color and not commonplace or monotonous to look at; and when spread over a fowl of the real Leghorn shape, with Leghorn style and characteristics, large pure white ear lobes, and a comb which every Leghorn breeder recognizes as perfect, I submit we have a fowl which has well earned its right to public favor and public patronage.

In selecting a pen of Pyle Leghorns for breeding purposes, great attention should be given to the color and style of the male. Let this color be rich and breast clear white, if possible, although it is hard to get as yet in a high top-colored bird. Mate this bird to females that are perfect "dreams" in shape, with solid brown breasts and free from ticking in the balance of the plumage and

nicely serrated, medium-sized combs, strong at base where set on the head and free from wrinkles or folds. For cockerels add two or three females with the red wing and some red in top color, provided, first, that they have white ears, and second, a small comb, erect, if possible.

The greatest point of beauty in a Pyle Leghorn is the white ear. The red stripe in the hackles of both male and female sets the ear off nicely.

Under the refining influence of the fancier's hand they will lose a trifle in weight, improve in shape, and no doubt gain in egg production with selection for prolificacy.

Standard for Red Pyle Leghorns

The Following Standard for Red Pyle Leghorns Has Been Prepared by George E. Howell:

THE following Standard for Red Pyle Leghorns has been prepared by George E. Howell:

Shape of male and female should conform to description given in American Standard of Perfection, pages 109 and 110.

Disqualifications

Red covering more than one-half surface of ear-lobes in cockerels and pullets, deformed backs, wry tails, side sprigs on combs, shanks other than yellow in cockerels and pullets.

RED PYLE LEGHORN COCK
First Prize at Madison Square Garden, New York, 1909-10. Bred and exhibited by George E. Howell.

Color of Male

Head: Plumage, bright orange or light red.

Beak: Yellow.

Eyes: Red.

Comb: Bright Red.

Wattles: Bright red.

Ear-Lobes: White or creamy white.

Shanks and Toes: Yellow.

Neck: Hackle, orange or light red, free from dark stripe down center of feather.

Back: Red or crimson.

Saddle: Orange or light red, free from black stripe.

Breast: White.

Body and Stern: White.

Wings and shoulders: Wing-fronts, white, wing-bows, red or crimson, wing-coverts, white, forming distinct bar across wing; primaries, white except lower feathers outer web of which is bay; secondaries, part of outer web forming wing-bay, red, remainder of feathers, white.

Tail: White.

Sickles and Tail Coverts: White.

Thigh: White.

Color of Female

Beak: Yellow.

Eyes: Red.

Face: Bright red.

Comb: Bright red.

Wattles: Bright red.

Ear-Lobes: White or creamy white.

Shanks and Toes: Yellow.

Head: Plumage, white feathers edged with bay.

Neck: Hackle, white feathers edged with bay.

Back: White.

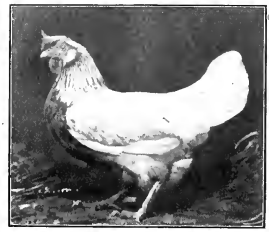
Breast: Bay or Salmon.

Body and Stern: White.

Wings: White.

Tail: White.

Thighs: White.



RED PYLE LEGHORN PULLET
First Prize at Madison Square Garden, New York, 1909-10. Bred and exhibited by George E. Howell.

CHAPTER VII

Leghorns in England

Absence of Shape-Distinctiveness From That of the Minorca—Characteristics of the English Bred Leghorn.

F. L. Platt

I HAD just turned from the Minorca display, and stepped across the aisle to the Leghorns, at the Royal Show which was being held at Norwich, England, and it was then that I noticed most vividly the absence of that shape distinctiveness which gives these two races their individuality, and so plainly characterizes the one from the other in the American show rooms.

The sprightly alertness and graceful lines of the American Leghorn did not characterize the English birds. In England, the birds are bred to a rectangular body shape with long legs, heavy combs and wattles and pendant lobes. The cocks are bred to weights of 7 to 8 pounds, and the hens to 6 and 7 pounds. "Size" is one of the first considerations with the English judges and breeders and is given a valuation of 15 points as against 4 points which have been allotted by the makers of our "Standard."

English Type of Black Leghorn Male.

Ear-lobes are the leading feature of the head and are valued at 15 points. The Poultry Club Standard requires that they be "well developed and rather pendant." Comb is allotted 12 points and here the judge again seeks size, and desires that the comb extend well beyond the back of the head, and follow the line of the hackle. In the female, the refined American comb is not seen, but, rather a heavier, larger appendage which forms one loop over the beak and then droops down on the opposite side.

These were the kind of birds that were exhibited at the Royal Show, and a very good display it was, measured by the English ideal. But, to those schooled in the fancy of the United States and Canada, the yellow shanks of the birds alone, and not their conformation and size, would have distinguished the Leghorn from the Minorcas.

American Leghorns in England

The English Standard specifically calls for large Leghorns and a wedge-shaped body—two factors that have from time to time, been the basis of argument for the breeding of larger birds of heavier type in America. I have always maintained that the Leghorn should have the size and strength necessary for the fowl's continued production of very many eggs. But, the English Leghorn is a notoriously ordinary layer at home, and on one large utility plant, I found imported American and Australian White Leghorns being kept for eggs, the English birds having been given up some years ago. It would seem that the size and also the type of our birds is conducive to their continuance as a favorite on our commercial egg farms, and it seems to me that we can do no better than maintain our present size and enjoy the gracefulness and beautiful finish of our Standard birds.

An English Criticism of the American Type

The day of an "International Standard" may come, but at present America and England are measuring Leghorn values according to vastly different standards. Both cherish their own ideals and there is beauty for each in the birds of their own breeding.

When the proposed Standard illustration which was suggested to take the place of the Leghorn picture in the "Misfit 1910 Standard" came out in the "American Poultry World," I was in London, and I clipped the illustration and mailed it to Andrew Leitch, Cameron Bridge, Fife, N. B. In response he wrote: "Yes, our ideals seem far apart. I like your Standard in cocks except comb which I think is a shade rocky, i.e., serrations not bold enough and spikes are too much on a level. I like them to rise from front to centre and fall off from centre to back. The hen's tail is not carried close enough for my liking. The gay tails get the cold shoulder from me. However, yours are the layers." (See illustration, page 28).

Mr. Leitch is a breeder of Black Leghorns and his birds are well known throughout Scotland and England, and the illustration on this page reproduces one of his

winning males. The White Leghorn head is of a cockerel that won first at both the Dairy and Crystal Palace Shows, England. He was bred by Whitaker and Toothill, Poole, Leeds. This head is not an extreme type but the desired type in England, this bird having won (in addition to the above) 1st at both the Leghorn Club and the White Leghorn Club shows, and special for the best bird in the Crystal Palace Show, 1910.

Brown Leghorns at the Royal Show

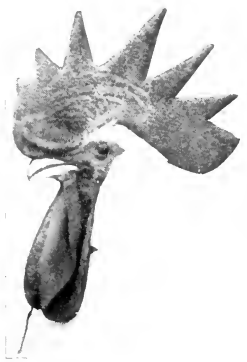
The Brown Leghorn males at the Royal were a bit shorter on leg and not as long in back as the Whites, and the Brown females were finer in bone and more after our Leghorn type. But, in color and feather markings, the males offer a contrast to American ideals. The top color is light—about the color of our pullet breeding males—and the saddle is of this orange color without the black striping.

The Blacks

The Black Leghorns numbered about the same as the White and Brown. With the S fold in their comb, their rather long backs and big size, the females are well nigh identical to the English Minorca type. The males are somewhat shorter in back and leg than the Minorcas, yet like the other varieties, they are styled after the Minorca fashion with their heavy comb, large lobes, long wattles, rectangular body without the concave sweep to tail, and rather heavy bone.

The Buffs

The Buff Leghorn which has come to hold a place in America second only to the White variety, was originated in England. Those at the Royal were of the rich surface color which the English prefer. On the other hand, the under-color was lighter in the females as the judges are not so critical as to the shade of the under-plumage.



ENGLISH TYPE OF LEGHORN HEAD AND COMB

A New Variety, the Blue

The Blue Leghorns shown were of a solid color, free from lacing. The variety came from a cross of Black and White Leghorns, so in type and size the Blues are about what the English seek in this breed.

Blue is the most difficult of the two composite colors, buff and blue, to breed. The one comes as a mixture of red and white while the latter comes from the crossing of black and white fowls.

Blue is a color that is difficult to establish in a variety, for there is always a strong tendency toward black and white, and after selective breeding has been carried on for a number of years, the color is secured on only a fair number of birds in each brood. Therefore, the Blue Leghorn with only a few years of breeding behind it will perhaps not be taken up in America with the enthusiasm that was accorded its predecessor, the Buff Leghorn—at least, not yet.

I visited one breeder of the variety in England who told me that his matings in 1910 were a failure. He had penned a blue male with blue females, and many of the progeny were white and the best of the youngsters were too light in color. So this year he headed his yard with a black male and mated him to rather light blue females, and the result was far better.

If blue as a plumage color could be perfected, if peacock blue could be bred, the birds that wore it would rival the most pleasing color schemes that we enjoy in our most attractive varieties.

But, intricate and beset with discouragements as its breeding problem now is, blue is essentially a color for the novice. The development of each of the colors and feather markings can be traced to an early period when they were still crude, unestablished and often undetermined in all particulars, and then their development—I think—cannot be attributed to breeders who had acquired skill from the long breeding of some other variety, but must be credited to progressive, studious, persistent beginners who taking up the race when it was young became familiar with the tendencies in its breeding, became absorbed in their task, and at last became masters of the color.

In the past I have too often said of this or that fowl: "It is not the fowl for the beginner," but if those who are coming on did not take up the new, who would? Henceforth I think it would be well to say of these new races: "It is the fowl for the progressive, earnest, persistent man with whom commercialism is not an immediate consideration."

The Silver Leghorn

A Silver Leghorn cockerel and pullet with rather neat heads were shown at the Royal. As the silvery tone of name would imply, this is a beautiful variety, well-deserving of more attention in America. In the male, the white hackle and silvery white back, the greenish black breast against which is laid a pure white wing with a solid black band across it, the black body, and the lustrous black tail; in the female the silvery head, steel gray back and body, and salmon red breast, make a flock of which the master is of striking color and the mates of soft and tender hue. Add to this the bright red comb of the Leghorn which bespeaks vigor and early maturity, and the graceful lines and active bearing of this stylish fowl.

The Other Varieties

Cuckoo, Pyle and Partridge Leghorns are also bred in England in limited numbers, but none were shown at the Royal. A pair of each of Rose Comb Brown, White and Buff Leghorns were shown and in each instance they were prefaced as "American Rose Combs," for only the Rose Comb Black Leghorn has a place in The Poultry Club Standard.

English Buff Leghorns

Color Improvement and Increased Size Chiefly Noticeable Since Their Introduction From Denmark in 1888.

The foundation stock of the American Buff Leghorn was imported from England twenty years ago. The progress made by breeders of Buff Leghorns in the United States and Canada in the improvement of both color and shape of body Buffs has been so great, that in type the latter excel the White and Brown varieties, while in evenness and soundness of color, the Amer-

The above illustration is reproduced from "The Feathered World," England. The subject illustrated is Colonel Allatt's Buff Leghorn Cock, winner of first and challenge cup at the Crystal Palace Show, 1910; first silver challenge bowl and gold medal, Buff Leghorn Club Show, Ingleton, 1910. This English Buff Leghorn male approaches the American type closer than any other we have ever seen illustrated in recent years. The comb like on all English Leghorns is rather large and too thick over the beak; neck, back and tail are well outlined, but more length of shank and thigh would improve the type from the American point of view.

ican Buff Leghorn surpasses most of the other buff varieties of poultry.

It will be interesting to American breeders to learn how Buff Leghorns have fared in the hands of English breeders, so we reprint below an article written by a member of the English Buff Leghorn Club which appeared in "The Feathered World," England, July 21, 1911. We also reproduce the illustrations of the Crystal Palace winner of 1910, published in the same issue of an English contemporary, as the type portrayed is an unusually good one from the American point of view. We quote:

As is well known to persons interested in what is generally known as the Mediterranean breed, all Leghorns originally came from Italy, although the breed was first sent into England from America in 1870, in which year Mr. Tegetmeier imported a pen of Whites. Two years later the Browns (or as they were then called Red Leghorns) followed, also from America. Mr. L. C. Verrey, who has had over thirty years' experience with Leghorns of all colors, except Blues, was the first Englishman to own a Buff Leghorn.

He purchased a hen that was exhibited at the Crystal Palace Show of 1888 by Mr. J. Pedersen Bjergaard, of Denmark, and afterwards obtained other birds of the same variety from Denmark. This little hen, though unnoticed by the Palace, took 2nd at Derby Show about a month afterwards, in a class for A. O. C. Leghorns. She was bred for utility purposes alone; but, as Mr. Verrey expresses it in his well-known book "The Leghorn Fowl," she was also even colored, "good in points and full of Leghorn characteristics."

At that time the hens were a uniform chamois or light buff, the cocks being of a darker color on breast and back, with white in the centre of the tail feathers. The birds did not, however, always breed true to color, and the quality of the ear-lobes and brilliancy of leg color left ample room for improvement.

The prevailing caprice of the English fancier of today is to breed everything to an excessive and unnatural size, an excellent development for table requirements, but in the case of the lighter breeds undoubtedly detrimental to laying capacity.

There are two Buff Leghorn clubs whose members are quite in accord on this point, and who are striving to retain the original characteristics of the breed, and to maintain the old reputation of the variety as a prolific layer of large white eggs. They favor a lively, active bird, the widest of foragers, the smallest of feeders. A heavy, sluggish bird with beefy comb finds no favor with them. They aim at the maintenance in the variety of the record combination of fancy and utility, which was established by the fineness of quality of the first Buff Leghorn imported into England.

These two clubs are the American Buff Leghorn Club, of which Mr. F. A. Tecktonius, of Racine, Wisconsin, is president, and the English Buff Leghorn Club, of which Colonel Sandbach is president.

The Americans have been more conservative with regard to size than have English fanciers. In Bermuda two Buff Leghorn cocks, one from America and the other from England, can be seen running side by side, and there is a visible difference in their weights. The show bird of the island, to be seen strutting about the grounds of Government House, is the English Buff Leghorn cock, and he has taken a prize in the show pen at home. This bird was selected for exportation to Sir Walter Kitchener, on account of his very hardy constitution and as being possessed of the essential attributes of his breed. His weight is a little over 4½ lbs., but he looks big by the side of his American comrade. Although differing in size they are both of the same active and vigorous type that obtains in the best of layers of the Leghorn family. This, in the opinion of the Buff Leghorn clubs, is a first essential.

In the laying competitions that have taken place recently in England at different places, the average weight of the Danish and American Leghorns (irrespective of color) has been about 3 lbs. 10 oz., and this approximates closely to the weight of the exhibition Buff Leghorn pullet.

An increase over this average weight is, however,

permissible, because Leghorns up to 5 lbs. in weight have taken part in laying competitions in this country. Many believe that an increase over the average weight of the American layers is due to a cross with one of the sitting breeds, and that if the increase of size is not overdone it is advantageous as conducive to a larger number of eggs in the winter months, and this is rather to be encouraged, provided it does not affect the size of the eggs or the total number laid within the year. It must, however, not be forgotten that the food bill depends to a great extent on the size of the bird, and that, looking at fowls entirely as egg producers, which is their principal office, the value of the eggs on one side against the cost of the food on the other is the fundamental and only source from which a profit can be derived. It is on these economical lines that the Danes, the Americans and the Australians keep down the size of their Leghorns as much as possible.

We claim, therefore that bred on these lines our exhibition birds are but glorified specimens of the variety, retaining their economic value as layers, and that there is only one stamp of Buff Leghorn which can be seen in the farmers' fields and in the exhibition pen.

It would be easy to quote extracts from communications from those who keep and favor the variety, showing the high opinion held as to their laying power, but such testimonials emanating from interested parties are sometimes of little value. They are apt to bring to mind the story of the gentleman who wrote, "My fowls are laying atrociously, but my poultryman is a first-class liar and keeps up the reputation of the firm."

It is, however, to the point that a week or two ago a gentleman who has studied poultry farming for many years in America and Europe, writing on "Modern Economical Poultry Keeping," proposing the keeping of from 2,000 to 3,000 birds on an acre, says, "The fowl for egg forming should be the Buff Leghorn." And I believe he is not a member of any specialty club, nor a breeder of the variety he recommends.

WHITE LEGHORN PULLET

Winner of the South African Championship, 1910. Bred and exhibited by Geo. Patmore, Golf Links Poultry Farm, Turffontein, Johannesburg, South Africa.

White Leghorns in South Africa

MR. PATMORE in a letter dated July 29, 1911, addressed to F. L. Platt, Associate Editor, Reliable Poultry Journal, makes the following introductory statements relating to his strain of White Leghorns: "I call my birds South African as I bred them 26 years and have been very careful not to get the birds too big and clumsy. They are splendid layers, the eggs averaging six and seven to the pound.

"I attributed my success to the blending of a pen of birds I imported from America with a pen received from England in the early days of my poultry keeping out here and making a specialty of White Leghorns; at six different shows this year I have beaten the imported English birds. The American White Leghorns are by far the better layers when compared with the modern English birds, but they are rather small and seem to get smaller out here after the second year's breeding with them. I do not think breeders can do better if they want a good all round White Leghorn than to follow my example. Of course, it takes time to bring them up to win at shows and be prolific layers, but I can safely say that I have accomplished this with my White Leghorns."

The specimen illustrated above, while showing the desired length of body lacks the fine and graceful lines of the American Leghorns. The comb, head, neck, back, body and tail are more of the Minorca type, but for utility purposes the shape of the South African White Leghorn is very good.

CHAPTER VIII

Judging Leghorns

How Judging is Done by the Score Card—Instruction in Scoring as Practiced by Judges in the Show Rooms

D. E. Hale

IN JUDGING Leghorns or any other breed one must first familiarize himself with the score card. The score card as shown below is a reproduction of the official score-card of the American Poultry Association, as revised and adopted at their annual meeting held at Niagara Falls, August, 1909. Some of the sections that were on the old card were divided at this meeting, making twenty sections, divided as follows:

Annual Show

POULTRY ASSOCIATION

Jan. 10, '10 Date

Official Score-Card American Poultry Association

Exhibitor *John Doe*

Breed *S. C. Brown Leg.* Sex *Cock*

Entry *1* No. Band *100* Weight

	Shape	Color	Remarks
Symmetry	*1*		
Weight			
Size	*½*		*Small*
Condition	*½*		*Frosted Wattles*
Comb	*2½*		
Head			
Beak			
Eyes			
Lobes		*½*	*Yellow*
Wattles	*½*		*Wrinkled*
Neck	*½*	*1*	*Not filled, poor tips*
Back		*¼*	*Light Edging*
Tail	*1*	*¼*	*High, purple bars*
Wings		*½*	
Breast		*½*	*Purple bars*
Body and Fluff			
Legs	*½*		*Short*
Toes			
Crest and Beard			
Shortness of Feather			
Cuts		*10¾*	*Score 89¼*

D. E. Hale Judge

F. L. Bradford Secretary

Figure A

The last two sections, "Crest and Beard," and "Shortness of Feather," apply to crested breeds and Games and Game Bantams only.

In order to give some idea of what we are doing in applying these valuations, etc., we must quote from the Revised Standard, the Scale of Points as applied to Leghorns.

Scale of Points

Symmetry	4
Size	4
Condition	4
Comb	10
Head: Shape, 2; Color, 4	6
Eyes: Shape, 2; Color, 2	4
Beak: Shape, 2; Color, 2	4
Wattles and Ear-Lobes: Shape, 4; Color, 6	10
Neck: Shape, 3; Color, 4	7
Back: Shape, 5; Color, 4	9
Breast: Shape, 5; Color, 4	9
Body and Fluff: Shape, 2; Color, 3	5
Wings: Shape, 4; Color, 4	8
Tail: Shape, 6; Color, 4	10
Legs and Toes: Shape, 3; Color, 3	6
	100

We note by the above "Scale of Points" that a perfect bird is represented by 100 points. In scoring a bird we take each section, as a whole, and deduct from the valuation of that section whatever per cent. we think it is defecient. For example you will note on the score card that symmetry is cut one point. As this section is valued at four points the judge considered that it lacked twenty-five per cent. of being a perfect specimen when judged as a whole and thus cut it one point. When we speak of "cuts," which we will do quite frequently, we mean deduct.

After examining the bird section by section and writing the cuts, or amount of deductions, on the score card as shown in Fig. A., the total cuts are deducted from 100 giving us the score of the bird.

The Leghorn Male

Let us first study the proper shape of a Leghorn, taking the male first. Note the drawings of the perfect specimen as shown on page 28, then study your Standard and get the shape description firmly fixed in your mind. The charts shown herewith are probably the best drawings ever made of a Leghorn. The head is of moderate length and fairly deep while the beak is nicely curved and of moderate length. The eyes are of moderate size and nearly full, while the face shows a well-rounded appearance and smooth, matching well the wattles and ear-lobes. Study the shape of these latter and you will note that they show no folds or wrinkles. The comb is as it should be; well proportioned, smooth and has the proper number of points or serrations, the fourth, or next to the rear one, is the highest. Note the distance from the beak to the first point and also note the blade at the rear and the distance from the head. You will also note, if you look closely, that the fourth point is about the same length as the base of the comb is deep, measuring from the base line of the comb to the base line of the point. This will give you an idea of proportion as applied to size of serrations. The breast is full and well-rounded while the neck shows the proper length and arch, joining the back in a graceful curve, continuing the downward slope to center of back where it rises with a beautiful sweep to.

the large, well-spread tail carried at an angle of 45 degrees and covered with long, well curved sickles and abundant coverts. The shanks and thighs are of proper length, giving us a bird that is truly a bird with an alert appearance and graceful curves.

The Female

Make the same study of the female drawing. Many questions are asked in regard to how a female's comb should droop. You will note that the front part of the blade and the first point stand erect while the rest gradually droops to one side. Held erect it resembles the male comb in shape having five distinct points, the fourth one being the highest, the others shorter as they approach the front and rear. The female's comb is finer in texture than the male's and same can be said of wattles. The ear-lobes have the same almond-shape and are also smooth and fine in texture. Note the long, rather slender and gracefully arched neck coupled with the same graceful connection—no break at junction—with the back, having the appearance of being a little longer than the male, connecting with a fine, well-spread tail carried at an angle of forty degrees. You will note that there are seven main-tail feathers on each side and that about half of each feather shows when viewed from the side. Bear this in mind and you will always note, at a glance, a properly spread tail. The breast shows the same full, round appearance as the male and with the legs of proper length we have a beautiful, active bird of curves.

Symmetry

The first section shown in the scale of points is Symmetry.

Webster defines Symmetry as "A due proportion to the several parts of a body to each other; or the union and conformity of the members of a work as a whole." Some score-cards show it as "Typical Carriage," which is defined in the Standard as "expressing a characteristic, in color or form, representative of a breed or variety." "Representative of a breed or variety"—please remember that, as it is the main point we wish to make.

In order to show our readers that this section was discussed years ago, allow us to refer to Mr. B. N. Pierce's book on "Wyandotte Culture." He says: "It may be well to remark, that among breeders, writers and judges, a great variance of opinion has been advanced relative to the importance of retaining this section in the future Standard. We know of no reasons, neither have any been presented in the various publications, proving that the symmetry section is either wrong or baneful in its influence on the well-being of thorough-bred poultry, or that by its use an incorrect value of the merits of a specimen is given." Mr. Pierce again says: "Symmetry, as a special feature in connection with our system of arriving at the merits of a fowl, is doing its own good work, and results in holding the characteristic shape of the various breeds of fowls distinct from each other, immediately detecting any encroachment of the one upon the other, by reason of its being a guide to the intelligent breeder as to the true and complete shape of the Standard specimen, no matter whether he is breeding fowls in Maine, California, Texas or Rhode Island. It is the shorthand way of acquiring and understanding the recognized or Standard shape of a specimen of fowls."

If we study and understand the Standard requirements of a fowl, study each section, also its general outline, how the parts or sections should fit together in harmony, in fact, get the ideal shape fixed in our mind as shown in the Standard drawings and description; the minute we get a good look at a bird we know whether it is typical of the breed it represents or has symmetry.

In Leghorns we have a breed that is described in the Standard as being a breed "of comparatively small size, of great alertness and of graceful curves." It also says that "decidedly short backs, short shanks and low-set bodies are objectionable."

We believe that a fowl's symmetry should be judged before the bird is disturbed. Especially is this true of the Leghorn. They are naturally of a nervous disposition and at the first indication of fright or nervousness they will draw their tail up, sometimes to a perpendicular position or even farther which makes it a "squirrel tail" and disqualifies the bird. Approach the cage carefully and look at the bird before disturbing it. See if each section is well developed and fits one with the other giving it a finished or typical appearance. If its breast is too full, spoiling the well-rounded outline effect as shown in the chart, cut one-half to three-fourths. Neck too short and thin, not arched, or too long and straight, not filled, giving it a scraggly appearance, cut one-half to one. Tail too high and pinched making the fowl look narrow at the rear, cut one to two. Tail too short, cut one-half. Legs too short and close together, cut one-half. Right here we wish to say that Leghorn exhibitors should put more time in training their birds to stand in a natural position, when the judges comes around, they will not try to fly through the top of the cage. A Leghorn can be trained as well as any other breed and a breeder should not expect to fall back upon the excuse that they are nervous and ask the judge to put them on the floor to get a good view of their shape, etc. A little patience in training a Leghorn will make it as tame as any fowl and save many a hard cut on symmetry. The Leghorn breeders should nave no more right to expect a judge to spend more time in getting a proper shape on his bird than any other breeder has.

You will soon get so that you will notice the defects mentioned above, at a glance and make up your mind whether the specimen should be cut one-half, one or one and one-half. A successful judge must thing quickly and act quickly. The minute you begin to hesitate and study as to the amount of the cut you begin to fail. Any experienced, reliable judge will tell you that ninety-nine times out of one hundred his first impression is the best.

Remember this section is worth four points and when you cut a fowl one for symmetry you mean it is, in your opinion, one-fourth or twenty-five per cent. to the bad. There is no system that we know of that can be successfully applied. The best way is to use your own judgment. You know this section is valued at four points and when you are judging symmetry, just forget that there is any other section to the bird; no matter if some exhibitor does tell you that you are cutting twice. Judge the bird as a whole and deduct whatever you think is lacking from perfection. If four points represents one hundred in this section, all right. If the bird is, in your judgment, twenty-five per cent. off, cut it one point for symmetry. They tell us "it is like a two-edged knife, cutting both ways;" one for symmetry because the bird has a bad tail or a bad breast and then cutting these sections again for shape when we come to them. That is not true. If symmetry is worth four points and a breast is worth five for shape and tail six for shape, we are not cutting twice. If you do not use this section of symmetry in scoring your specimen, then you should deduct your total cuts from ninety-six instead of one hundred.

Size

As the Leghorns have no weight section, no Standard weights being applied to them; they come under the section listed as size. This section has also been reduced in valuation from eight to four points inasmuch as any fowl having a weight clause that is two pounds under Standard weight is not to be considered, or in other words, disqualified. There are many judges who never cut a Leghorn for size claiming that they have no given size. In our opinion, this is a grave mistake and results in many diminutive specimens winning a prize that ought not because they will never be large enough to become good breeding specimens. We believe that these small "bantam" Leghorns should be cut from one to two points in order to discourage the breeding of such specimens. We do not want a coarse, overgrown specimen looking more like a Minorca or Plymouth Rock in shape, but we do believe in having them large enough to be good sprightly business birds.

Disqualifications and General Shape

Up to this point we have not found it necessary to take the bird out of the cage. It might be well to take notice of a few things before doing so and perhaps be saved the extra work of handling the specimen.

If it is a single comb male and you may be able to note any side sprigs, if it has them, and as side sprigs disqualify, it is well to look for them now as well as when handling the specimen. A lopped comb, lopped over far enough to disqualify would also show at a glance. In order to disqualify it must fall over to one side so far as to come below the horizontal line where the comb begins to lop. Understand this only applies to the single comb male. Squirrel tails, that is those that are carried in front of an imaginary perpendicular line from the base of the tail, one that points more toward the head than the rear, disqualifies.

Feathers or down on shanks or toes now disqualify and can sometimes be noticed before handling the bird. Side sprigs on single comb females disqualify but cannot always be seen until a specimen is handled on account of the comb which should droop to one side. In the rose comb varieties a lopped comb, to disqualify, must fall over to one side far enough to touch the fowl's head. A comb that is so large as to obstruct the sight also disqualifies. That means that if you hold a fowl so that you can look right at the point of its beak and cannot then see the fowl's eye on account of the large or "beefy" condition of the comb, it disqualifies.

After taking the specimen out of the cage you will examine for crooked back which can be detected instantly by passing the hand down the fowl's back. A crooked back, also deformed beaks disqualify. The color disqualifications will be taken up under the different varieties as they are explained herein.

In getting the shape of a fowl and cutting the different defects we proceed as follows: If we think the neck looks too long, or if in poultry show parlance, it is "not filled," that is, full of undeveloped feathers, giving it a scrawny appearance mentioned under symmetry, the cut is from one-half to one. If the back, which is worth five points for shape, is too long, too narrow, too flat, saddle "not filled," too narrow, or too flat at the shoulders, etc., cut from one-half to two as in degree.

Now look at the tail and see if it is carried at the right angle. Is it well spread and well developed? Remember the instructions under description of "The Female in regard to a well-spread tail. Should there be an angle at the base of and in front of the tail, it is probably carried too high and should be cut from one-half to two and one-half. The breast on a Leghorn should be "full and well-rounded;" should it show undeveloped and narrow the cut should be one-half to one and one-half. If a female's breast is undeveloped yet has the large pendulous crop as is sometimes seen in hens the cut should be one-half to two. The body is "moderately long and fairly straight from point to rear;" should it be too deep, bagged or "down behind," or too loosely feathered, the cut should be from one-half to one. If the bird's legs are too short, cut one-half to one. Knock-knees should be cut from one-half to one; legs too long, cut from one-half to one. Crooked toes are cut one-half point each. Absence of spur on cock bird is generally cut one-half point each.

In looking at wings it is best to hold your cuts for shape until you have the fowl in your hand as there may be some broken or missing flight feathers. You should, however, see that the wings are carried in a proper position and not slipped. By slipped wings we mean one where the primaries fall or hang down and are not "tucked up" under the secondaries as they should be. This is caused sometimes by a feather or two being missing where the primaries and secondaries are connected and sometimes by a muscular weakness. It should be cut from one to three points, depending upon whether it is one or both wings that are slipped. This defect will transmit or reproduce and really should, in our opinion, be made a disqualification; therefore it should be cut hard enough to throw the specimen out of the ribbons and discourage the breeding of such specimens. Now we are ready to take the specimen out of the cage and examine it for color and other defects. Do not reach in and grab it by one leg and

2

drag it out, thus taking chances on breaking wing feathers; take hold of one wing, from in front, near the body and you can turn the bird in any position you wish. Then lead it out of the cage and as you do so, with your other hand grasp its legs at the hock joint letting the bird's body rest on your arm. The fowl is thus held securely and comfortably and can be easily examined without danger of injury.

Condition

The next section we notice on the score card is condition. It is valued at four points and is one of the most difficult sections on the list to explain in writing. No definite rule can be laid down for cutting defects found under this section. The judge has here got to go slow to show his wisdom and "horse sense." He has got to be familiar with the different diseases, the effects of freezing or frost-bite, injuries, etc., dirty and broken plumage and whether there is a poor condition from overfeeding or starving. Condition as referred to in the Standard means, "the state of a fowl as regards health, cleanliness and order of plumage." Some birds will catch a cold on being shipped to a show and just begin to show it when judged. In these cases the judge will generally consider the specimen, cutting from one-half to one and one-half. If, however, the bird has a well-defined case of roup or other contagious disease, it should at once be removed from the show-room, and if the superintendent has not noticed it before the judge gets to it, the judge should notify him at once and have it removed.

3

Frosted combs and wattles should receive a cut of from one-half to two, depending upon whether they are just slightly frosted or whether they are festered.

Soiled plumage that looks as if the exhibitor had made no effort to get the bird in good condition, should be cut from one-half to two points. If they look as if they had been cleaned up in nice shape and become soiled in being shipped to the show or from dirty coops caused by careless show management, the judge can be a little lenient with such specimens.

If the bird is too fat from over-feeding and has "gone down behind," as they say, it should be cut from one-half to one and one-half points.

Scaly legs. There is no excuse whatever for showing a bird with scaly legs because they are so easily cured. A good scrubbing with hot water and soap, then a little kerosene, lard or vaseline applied twice a week for two weeks will cure the worst case that ever existed.

Whenever you cut for condition note in the remarks column of the score card the reason. (See Fig. A.)

Comb

This is the most valuable section of the Leghorn, being valued at ten points and only shape to be considered. There are many defects to be looked for and this section is one hard to breed and get good.

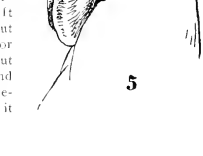
Single Comb

Most breeders seem to understand that there should be five or more points or serrations and that every point more or less than five should be cut one-half point each. For example if a comb has six points cut it one-half point, if it has four points cut one half; if it has seven or three, cut one point, etc. We hear many exhibitors remark "there is a good comb, it has five points," or "there is a poor comb, it has six or seven points," as the case may be. They do not seem to realize that if all the serrations were missing it would only call for a cut of two and one-half points and we would still have left a valuation of seven and one-half points to cover other defects. Let us look at some of the other defects illustrated here. In Fig. 1, we have not only a perfect comb, five serrations, fine in texture, free from folds and wrinkles, the blade of proper proportion and fitting the head perfectly, but the eye, beak and wattles and ear-lobes all show perfect shape and are well worth careful study. In Fig.2, we have a comb that is a bad one and one that no fancier should allow in his breeding yards. Let us score it. In the first place it has ten serrations calling for a cut of two and one-half (five points too many). The serrations are uneven and should be cut one point for that defect. It has a bad thumb-mark on the side and this defect is never cut less than one point. It follows the head too closely and too far back and should be cut at least one-half for that defect, making a total of five points or fifty per cent off.

In Fig. 3, we have a comb not as bad. It has seven serrations which call for a cut of one point. It is too thin at the base causing the comb to wilt or start to lop over, especially when confined in a warm place for a few days; such combs get a cut of one point for thin and light base. The points of the serrations turn at the top and should be cut one-half point, making a total of two and one-half. These thin combs generally stand up and look fairly good when the bird is out in the open but a warm room and rich food, especially bone or meat, will soon cause it to go over. For those who have females with thick coarse combs not inclined to droop these thin male combs are sometimes useful in breeding to produce pullets with a nicely drooped comb.

4

In Fig. 4, we have another defective comb, one that used to be quite commonly met with in the show-room, but we are pleased to say are fast disappearing. It has seven serrations, so cut it one point. The twist or fold in front should be cut one. The blade is high and too long which should receive a cut of one-half and it



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is rough or uneven which should also get a cut of one-half, making a total of three points.

6

Let us, while on combs, study a few female combs. Look at the female chart on page 28 and you will note that it has the five serrations and the front portion and the first serration stand erect, the balance gradually drooping to one side.

In Fig. 5, we have a female comb that is quite common in the show-room. One's first impression is that it is a pretty good comb but it is too loose on the head and is liable to fall to either side. The serrations are too long and uneven and should be cut one-half point. The general shape of the comb is bad and this style comb generally looks coarse. We would cut it one point for this defect. The blade is poor shape and rough and should be cut one-half, making a total of two points.

7

In Fig. 6, we have another defective female comb. It is too stiff and upright and falls both ways which should be cut two points on general shape. It only has four serrations which gets a cut of one-half and the rear blade falls too far forward which should be cut one-half, making a total of three points.

In Fig. 7, we have a very bad female comb and one that should never be used in a breeding pen if you have any desire to improve this section. It is rough, coarse and irregular and should be cut about three and one-half to four and one-half for general poor shape. It has the correct number of serrations but falls both ways and is poor all over. Such a comb should be cut so severe that the breeder would be discouraged from breeding it.

Rose Combs

Let us also take up the rose comb. In Fig. 10, we have illustrated a perfect male rose comb. Note that it is nearly on a line from front to rear of spike, a slight rise being noticed over crown of head. You will also note that the spike appears to be separate and not a continuation as in the Wyandotte. The spike does not follow the head but is elevated. Notice also the corrugations on the comb. Notice the space between the eye or top of the head and the comb.

8

In Fig 8, is shown a lopped comb; one that falls over far enough to come in contact with the fowl's head. If it touches the head it disqualifies. If it does not it is very bad anyway, but would not disqualify. It has a hollow center or seam through the center which should be cut one point. It is too wide in front which should be cut one-half and two points for general bad shape, making a total of three and one-half.

In Fig. 9, we have a comb that is wider at the rear than in front. It is very unevenly corrugated and has a hollow center. It should be cut one and one-half for general poor shape, one point for hollow center or front and one point for smoothness, making a total of three and one-half.

So one can readily see that the comb is quite a study and the comb that gets off with a cut of one and one-half is a pretty good comb.

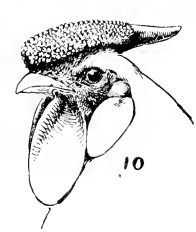
9

Heretofore we have been speaking of the Leghorn in general covering all varieties but as we now come to those sections in which color is considered we will take each variety separately and in the order named in the Standard.

Brown Leghorn—Male

Head is the next section listed on the score-card and is valued at six points, two for shape and four for color. The shape has been explained in the explanation of the Leghorn male. Should it be too long and narrow having what is termed a "snaky" or "Gamey" appearance, cut one-half. In color it should be "dark red" and it is very seldom that it receives a cut. Should you find one with head plumage too light colored or with a tendency to be laced, cut from one-half to one.

Eyes are the next section and valued at four points, two each for shape and color. If blind in one eye, cut one. If the eye has run out leaving only the socket, the cut should be one and one-half. The color of the eye should be a "reddish bay." If too light being more of a golden than a red, cut one-half to one. If green or what is spoken of as "fish eyes," cut one point each.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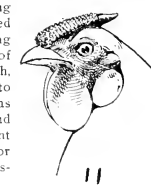
Beak is also valued at four points, two for shape and two for color. This section was formerly incorporated under head section but is now treated separately. Remember deformed beaks dishafqualify. A beak too long or too straight should be cut one-half. If too light in color being more of a yellow than "horn," which is very seldom found, cut one-half.

Wattles and ear-lobes are next and valued at ten points, wattles being valued at four and ear-lobes at six. Your attention was called to them in connection with Fig. 1, where you see them as they should be. Note that the ear-lobe is small considering the size of the bird. It is claimed by old breeders that in breeding them too large there is danger of their developing red edges which, if continually bred is liable to cause white in the face and as "white in the face of cockerels and pullets disqualify" it is important to guard against such defects or you will be liable to breed disqualified birds.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In Fig. 2, is shown a poor set of wattles and ear-lobes. The wattles are too long, uneven and folded. Such wattles should be cut at least one point. The ear-lobes are rough or folded, giving them a lumpy, unsightly ap-

pearance and should be cut one point for shape. While the Standard says ear-lobes should be "white or creamy white," white is preferred and such an ear-lobe as shown in Fig. 2, is generally yellow and showing red edges—if it is yellow or reddish cut from one-half to one and one-half for color.

In Fig. 3, we have a pair of wattles that are even in length but are folded and hang poorly. Such wattles should be cut one point. Judging the ear-lobe as shown here we should cut it at least one-half, as it has the appearance of having a hollow center and is too pendulous in character.

Fig. 4, shows a wattle fairly good in shape being, perhaps, a trifle flat in front and at the bottom and deserving a cut of one-half. The ear-lobes are not rounded or smooth. They look lumpy, irregular and red and should be cut at least one for shape and two for color. Remember that "red covering more than one-half of the ear-lobe in cockerels and pullets will disqualify."

Neck

This section is valued at seven points, three for shape and four for color, and as a rule is very good in shape. The most common defect found in shape of neck is when not in full plumage causing a break in the plumage that spoils the curve or arch. A cut of one-half will generally cover it. In color the neck should be of a "rich, brilliant red, with a lustrous greenish black stripe running down the middle of each feather tapering to a point near its extremity, the red to be free from black." The latter part of the above description is important, viz.: "tapering to a point near its extremity, the red to be free from black." It is important that the black tip be free from red and that the red tapers to a point, otherwise the beautiful striped or laced effect is lost. Examine the chart on page 28 and you will get a good idea of how they should be. The shaft of the feather should be black and where red shafts are noticed the cut should be from one-half to two as in degree. Where the black and red are intermingled, giving a mealy appearance the cut should be from one to two and one-half. Where the tips are black or splashed the cut should be from one to two and one-half. White in under-color should be cut from one and one-half to two and one-half depending upon the amount of white.

Back

Back section is valued at nine points, five for shape and four for color. Shape description and cuts have been explained under "disqualifications and shape." This section has been increased two points in valuation, the extra two points being added to shape, as it is generally conceded that the back is one of the most important sections there is. There is so much chance of getting back too long, spoiling the shape and symmetry of the whole bird that the old Standard did not give enough valuation to shape so that a judge could cut hard enough to discourage the breeding of such specimens. This increased valuation on back shape will be a good thing for the breed. The back should be of medium length, the saddle rising in a short concave sweep to the tail. If too long or too narrow cut one-half to two as in degree. If too short giving the bird a blocky appearance cut one-half to one. If flat showing a break at junction of neck or tail or both, cut one-half to two and one-half as in degree. The lowering of the tail carriage gives the back a longer appearance than formerly so breeders must watch and discount hard those diminutive specimens with the extremely long backs.

In color the back should be red striped with black, same as hackle. The saddle feathers are broader and the saddle hangers longer. Breeders gave their best attention to this section for years and made great improvement. The defects most commonly found are mixed black and red edges which should be cut from one-half to one and one-half. When red shafts are discovered cut one-half. Red centers or those failing in the black striping, giving the back a red or mealy appearance should be cut from one to two as in degree. If the striping shows only on one side of the shaft, cut one point. In breeding for exhibition cockerels a good strong black stripe in hackle and saddle is desirable. The light or "lemon" colored necks and saddles are used to produce exhibition pullets. You must breed to get the striping in proportion to the feather if you wish to get a perfect saddle on cockerels.

Breast

This section is valued at nine points, five for shape and four for color. The shape valuation was reduced one point at the recent revision of the Standard. Remember the shape should be "full and well rounded." That does not mean deep and broad like some of the other breeds but "well-rounded." If too narrow, flat or undeveloped cut one-half to one. If too low and not carried well up, cut one-half. In color it should be "glossy black." The most common defect found here is purple barring which should be cut one-half to two.

Body and Fluff

This section was reduced one point in valuation and is now valued at five points, two for shape and three for color. There are few defects found in this section and we generally include crooked breast or keel-bones here instead of breast as the defect is generally found below the breast, generally between the thighs. Crooked breasts or keels should be cut from one-half to two as in degree and in "remarks" column on the score card, the clerk should write "C. B." or "C. K." for crooked breast or crooked keel so the exhibitor would understand the cut. In color this section should be black. Should it show red colored or mossy feathers the cut should be from one-half to one.

Wings

Wing section is valued at eight points, four each for shape and color. They are generally good in shape. Broken or missing flights are cut one and one-half each. White in wings of Brown Leghorns disqualifies except at base of primaries in cock birds and if found there it is cut one and one-half point. Other shape cuts are described under "disqualifications and shape." In color the bows should be rich, brilliant red; the wing fronts black, while the primaries are black with the lower web edged with brown. The secondaries should be black, the lower web having a brown edging of sufficient width to make a wing bay of the same color. The coverts should be greenish black forming a well defined greenish black bar across the wing when folded. The most common defect found is poor wing barring, the smutty appearance of shoulders caused by the mixing of the red and black. These defects should be cut from one-half to one and one-half.

Tail

Another important section with a valuation of ten points, six for shape and four for color. Shape valuation has been increased two points. It is seldom we find a Leghorn male tail that can be passed without a cut. Being

of a very nervous disposition (as explained before) their first inclination, when disturbed, is to draw their tail up to a perpendicular position. Remember what we said about training your fowls to pose naturally. The judge should give the bird a chance and try to catch it in a natural pose but he does not have much time to wait for it. When a tail is naturally carried high there is generally a break or angle at the base and in front. A tail carried too high should be cut from one-half to two. A decidedly wry tail disqualifies. Remember it must be "decidedly wry." Leghorn tails are so long that it quite often happens the coops are too small causing the tail to touch the sides of the coop whenever the bird moves, causing it to carry the tail first on one side, then on the other. This is not a "decidedly wry" tail and should not disqualify although the tail should be cut from one to two points as in degree. If the coverts are short showing only the main tail, cut from one-half to one. Missing sickles should be cut one and one-half point each. In color the tail should be black. Purple bars should be cut from one-half to two points as in degree. Any white in the tail of cockerel disqualifies. In cock birds one inch or less at base of tail is allowed but is cut one and one-half points.

Legs and Toes

This section is valued at six points, three each for shape and color. Shape defects have been described. In color, shanks should be yellow and the toes, yellow or dusky yellow. If faded and light, cut one-half to one and one-half.

Brown Leghorn Female

Study well the illustrations in the Standard, as well as chart 2 on page 28 as this shape will answer for all varieties.

In scoring the Leghorn female; symmetry, disqualifications, shape and head points have been taken up before under the general headings and also in male descriptions, so we will start with the head section which is valued at six points, two for shape and four for color. In color it should be golden yellow tinged with a light brown. Its shape should be "short, deep"; similar to the male but finer. Should you find one of the long, narrow, "snaky" or "Gamey" kind cut it one-half. Should the head plumage be too dark or red, cut it one-half to one. The ear-lobe and eye, color and shape, should be cut as explained under those sections as described for male.

Neck

This section is valued at seven points, three for shape and four for color. Chart 2 shows very plainly the shape and striping of the feathers. The color description has been changed to read "golden-yellow" instead of "rich" orange-yellow," broad stripe down the center of each feather tapers to a point near the extremity. The same caution and in struction as applied to the male neck in regard to striping should be observed here in connection with the female. It is claimed by most breeders that in order to get the nice seal brown so much desired on back, wings and coverts that they are quite liable to get a little penciling in the neck or hackle feathers and this seems to be the general rule. It has often been talkd of that the Standard ought to be changed in neck description so as to allow the penciling but as long as it calls for the black striping we must judge them accordingly. If the neck is too long or "Gamey," not filled, as mentioned before, cut from one-half to one. If there is a break at the junction with back, caused by the feathers being too short, cut one-half to one. In color, if the black centers are slightly penciled the cut should be one-half point. If the yellow or red runs into the center of the feather enough so that it fails to show black, cut from one-half to one and one-half. If the black extends through the tip of the feather so as to spoil the laced effect on the out-side, cut from one-half to one and one-half.

Back

This section, you will remember, has been increased in value and is now valued at nine points, five for shape and four for color. In shape it is described as "medium in length." The color should be light brown finely stippled with a darker brown, the lighter shade predominating; greater value is given to fineness and sharp definition of stippling; also to evenness of color and freedom from shafting rather than to any particular shade of color. It is important to secure the effect produced by a soft even brown not suggestive of gray, which is one extreme to be avoided, and red, which is the other extreme—the parts of the feathers not exposed, to be brown, shading into slate in fluff, or under-color. We see too many dark colored females where the color might be described as black stippled with a dark brown. Such specimens might do for breeding exhibition cockerels, but they are too dark for exhibition females and should be cut for this defect from one-half to two and one-half.

Shaftiness should be cut one-half to one and one-half. Red, or as it is commonly spoken of "brick" color, should be cut from one to two.

If the back is too long or too narrow, cut from one-half to two, as in degree. If too short, giving the bird a blocky appearance, cut from one-helf to one. If flat, or it fails to rise as it meets the tail, cut one-half to one point. If it shows a cushion similar to the Wyandotte, cut one-half to two.

Breast

This section has been reduced one point in valuation and is now valued at nine points, five for shape and four for color. In shape it should be well-rounded and full, the color should be the same rich salmon, shading off lighter under the body; free from shafting. If too full or too narrow, cut from one-half to one and one-half. If it fails to show a nice, rounded-out appearance, cut from one-half to one. If not deep enough through from shoulders to keel-bone cut from one-half to one. The most common defects found in color is shafting which should be cut from one-half to one; and the black or brown edging which should be cut from one-half to two points.

Body and Fluff

This section has also been reduced one point in valuation and is now valued at five points, two for shape and three for color. In shape the body should be of medium length; the fluff, rather short and developed more than in the male. The body color should be a light brown stippled with a darker brown while the fluff should be a slate color plentifully tinged with brown. It is very seldom that this section is cut any for color. Occasionally a slight edging will be discovered as described in breast and should be discounted one-half to one point. If the shape of the body is too narrow spoiling the nice plump appearance of this breed cut from one-half to one point. If the breast or keel-bone is crooked, cut from one-half to one and one-half as in degree.

Wings

This section is still valued at eight points, four each for shape and color. In shape they should be large and

well folded while the color should be small feathers stippled as described for back; primaries slaty-brown; secondaries, brown, the outer web finely stippled with a lighter brown; coverts same as back. In speaking of large wings on a Leghorn, it is not meant a large clumsy wing but large for the size of the bird. This breed being unusually sprightly and quick it is natural that this section should be more developed than on some of the heavier breeds. When in repose the wings should be nicely folded against the sides. If they fail to fold as they should and have a droopy appearance they should be cut from one-half to one. If the feathers are broken or missing, cut one and one-half point each. Remember that white in wings disqualifies and it is for this reason that broken or missing flight feathers are cut so hard. In color the most common defect is the brick color running down on shoulders and sometimes down onto the center of wing; where found this defect should be cut from one-half to two points as in degree. If any black or smutty edging is discovered, cut from one-half to one and one-half.

Tail

The valuation of this section has been increased two points and is now valued at ten points, six for shape and four for color. In shape it should be carried at an angle of forty degrees, long, full and well spread. Remember what we said about a well-spread tail and there being seven main-tail feathers on each side. If tail is carried too high, cut from one-half to one and one-half as in degree. Broken or missing main-tail feathers should be cut one point each. A pinched or "Gamey" tail should be cut one-half to one and one-half. In color the tail should be black except the two top feathers which are stippled with light brown while the coverts are same as back. If any brown appears in the main-tail feathers except the two top ones, cut from one-half to one point. If the two top feathers fail to show any penciling, cut from one-half to one. If brown tips are discovered with a sort of gray shading, cut them from one-half to one and one-half.

Legs and Toes

This section is valued at six points, three each for shape and color. The thighs are described in color as slate, plentifully tinged with brown; shanks, yellow. Toes, yellow or dusky yellow. If the legs are too long or too short cut from one-half to one as in degree. Shape defects such as knock-knees, etc., have been described. Color cut as described for male apply here.

White Leghorns

All requirements and cuts as to shape, combs, wattles, eyes, face, symmetry, shape disqualifications, etc., explained above, are the same as for this variety. We find a few color changes in this variety as follows: Beak must be yellow, instead of horn; ear-lobes must be white instead of "white or creamy white" and legs and toes must be rich yellow instead of yellow. The plumage must be pure white, including quills, web and fluff. "Feathers other than white" and "legs other than yellow, except that red showing down the outside of shanks, back of scales," will disqualify. The most common defects and cuts are explained as follows: Creaminess in any part of the plumage cut from one-half to one and one-half in each section where found. Brassiness should be cut from one to two in each section where found. Be careful and not confuse brassiness with creaminess. The latter is generally caused by an excess of oil in the quill which is used up as the feather matures while brassiness is generally found only on the surface and if you raise the feather that looks brassy you will no doubt find that the quill is pure white and that the brassiness does not extend below the surface. These two defects could not be defined any better. A brassy feather has a metallic, brassy look while a creamy feather looks oily or creamy. Faded shanks and toes should be cut from one-half to one and one-half. Broken or missing flight or main-tail feathers should be cut one and one-half points. Ticking, that is small gray spots in plumage should be cut one-half to two in each section where found. You will generally find it in your whitest specimens.

Buff Leghorns

The same general descriptions and cuts for shape, etc., govern the Buffs as have been explained under general headings and also for the Brown variety. There are no plumage disqualifications for this variety. The same ear-lobe disqualifications as appleid heretofore apply hare and the same shank disqualifications as apply to the Whites, apply here.

The legs and toes are now described as a "rich yellow," instead of "yellow." The plumage color is described as being a rich, golden buff. We all know that there are several different shades of gold but the general understanding is that cinnamon is the extreme dark shade and lemon the extreme light shade and a happy medium is desired. There is not so much demand for a certain shade as there is that the specimen be of an even color throughout. While most breeders prefer black to white, if they must have one or the other, both are equally objectionable according to the Standard and must be punished accordingly. Some of the common defects found and cuts for same are as follows: Light colored shafting should be cut from one-half to one and one-half in each section where found, as in degree. Mealiness, generally caused by a mixture of a light and a dark strain, should be cut from one-half to one and one-half in any section where found. Black or white should be cut from one-half to the color limit in whatever section it is detected. All things being equal the specimen with the richest under-color should win.

Black Leghorns

We are pleased to note that this variety is gaining in popularity. The same general shape requirements, shape disqualifications, combs, wattles, ear-lobes, etc., and cuts for shape apply here as explained in the preceding pages. Feathers other than black and shanks other than yellow or yellowish-black will disqualify. The beak should be "black shaded with yellow" and when found too light in color should be cut one-half point. The plumage should be a rich, glossy, greenish-black throughout. The most common defect is purple bars which should be cut from one-half to two wherever found. A good thing for the black breeders to rememeber is that by mating male and females that have exceptionally black under-color, the tendency is to breed the purple bars. Remember that feathers other than black will disqualify. Look out for the large coarse combs as we do not want Minorca combs on a Leghorn; the same can be said of the shape throughout.

Silver Duckwing Leghorns

Same general description and shape disqualifications as given in the preceding pages apply here. There are no special color disqualifications on this variety. Eye color is the same "reddish bay" as for the others. The ear-lobes of the male should be white but the females' lobe may be

"white or creamy white." This allows some latitude in the female ear-lobe that is not allowed in male which is necessary on account of the yellow or salmon pigment in the color of the female plumage.

Color of Male

The head plumage should be silvery white and if any brassiness is found it is generally covered by a cut of one-half point. The feathers of the neck have a silvery white edging with a lustrous, greenish black stripe down the center of each as explained for the Brown Leghorn except that silvery white edging takes the place of the red. The defects and cuts as explained there will apply here; merely substitute silvery white for red. The back is silvery white with the saddl striped same as hackle. Any brassiness found in back cut from one to two and the same saddle defects as explained under the Brown Leghorns apply here, except substitute silvery white for red The wings have the bows of silvery white with the primaries black, their lower web edged with white (used to be silvery white). Secondaries, black with lower web edged with white of sufficient width to secure a wing bay of white. Coverts are a lustrous black so as to form a wing bar when wing is folded. Any purple barring found in wings cut one-half to two. Any brassiness in wings cut from one to two. If black and white are mixed spoiling wing bay and wing bar causing a smutty appearance, cut from one-half to one and one-half. Breast and body and fluff should be black. Purple bars cut one-half to two. Any gray edging cut from one-half to one and one-half. Under-color should be slate. Legs and toes should be: thighs, black; shanks, yellow; toes, yellow or dusky yellow. Faded or light leg color should be cut from one-half to one. The tail should have the sickles and upper coverts a lustrous black; the lower coverts, silvery white. Purple barring is cut from one-half to two. Should there be any gray mixed in the black cut from one-half to one. Should the lower coverts not be white cut from one-half to one.

Color of Female

Head color should be silvery white; if any brassiness cut one-half. Eyes are the same. Ear-lobes may now be white or creamy white as explained above. Neck description and cuts are the same as for male. The back should be light gray, stippled with black. Look out for shafting and brassiness and cut as described above. The breast should be a light salmon extending well up on the throat and shading to gray near the body. The color defects are liable to run to gray which should be cut from one-half to one and one-half. Shafting should be cut as described above. The body and fluff should be ashy gray stippled with black and it is very seldom found necessary to cut this section. The tail is black except the two top feathers which must be stippled with gray; coverts are light gray stippled with black. Look out that the gray stippling does not extend into the black main-tail feathers, in which case it should be cut one-half to one. Lack of stippling in top feathers should be cut one-half to one. Legs and toes are: thighs, light gray; shanks and toes, yellow. Faded legs should be cut from one-half to one and one-half.

Summary

We do not expect this article to cover all the points that one will run across in judging Leghorns as there are many points that come up from time to time where one must use his judgment. You should have a Standard of Perfection and know it letter perfect, then by making use of the points mentioned here you ought to be in a fair way toward scoring them pretty close to where they belong. Study the requirements, then study the breed and the varieties as you handle them. Do not be afraid or ashame[d] to ask and to take the advice of old breeders. Be fearless and just in your application of the Standard and do not be afraid to acknowledge and rectify mistakes. For the beginner, the Brown Leghorn is one of the hardest breeds there is to judge, but once you know them thoroughly they are as easy as any.

CHAPTER IX

Commercial Leghorn Farms

Rapid Growth of the White Leghorn Egg Industry in the United States. Remarkable Increase in the Production of White Eggs. Methods of Hatching, Rearing and Feeding Leghorns on Large Commercial Poultry Plants. Grading, Packing, Shipping and Marketing Eggs and Squab Broilers for Market. Noted Leghorn Farms in the East and West.

J. H. Drevenstedt

TO THE white shelled egg the establishment of a great industry is due. The multiplication of commercial Leghorn egg farms all over the United States has been rapid in the last decade and there seems to be no limit to the production of white eggs in the years to come. The demand for choice white shelled eggs far exceeds the supply at present, and as the country expands, population increases, the consumption of eggs will grow and expand in a similar ratio, or if we mistake not, will increase greatly in proportion to the present demand. The value of eggs as food is being better understood and appreciated since the prices of meats have soared upward to a point where they become almost prohibitive with many families. Milk, cereals and eggs consequently become more staple articles of food than in former years.

It is true eggs have advanced in price, but eggs even at five cents each are cheap, wholesome and nourishing food.

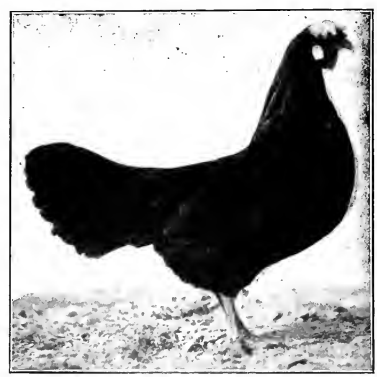
Potent Influence of the Leghorn Fowl.

The cause of the increasing demand and popularity of white shelled eggs must be attributed to the gradual and potent influence of the Leghorn fowl in shelling out a uniform product that looked fresh and attractive to the buyer. A dozen clean white eggs in a neat carton displayed on the counters of first class grocery and fruit stores proved a powerful educator to the buyer and seller. The mixed or motley looking eggs of all sizes and colors formerly displayed in baskets, no matter how fresh they may have been, lacked the selling quality of the uniform product.

But when and where did this demand—formerly and erroneously called a fad—originate, is a mooted question. As far as this country is concerned, we believe New York City was the first market that classified White Leghorn eggs and put a premium on the price of the latter, and it was in the early seventies that this took place. But all white eggs in those days were not laid by Leghorns, for we remember most vividly the first basket of white eggs we ever saw, and that was in Yorkville, then a suburb of New York City, now a densely populated portion of Greater New York. These eggs were brought over from Long Island by a farmer who had a flock of Black Spanish fowl, to the city markets, where they were sold at a much higher price than was obtained for mixed lots of eggs on sale. These eggs weighed seven to the pound, were chalk white in color and presented the most attractive appearance of a hen fruit we ever saw. In after years we remembered these eggs and at the first opportunity when we began farming in 1883, purchased some Black Spanish eggs for the purpose of hatching and building up a flock of layers that would produce the finest white eggs for the family and market trade. But the Wyandotte fever was too strong upon us and we discarded the Spanish to take up the Silver Wyandottes. Occasionally we would find such Spanish eggs in the markets, but the advent of the Leghorn soon crowded out the Black Spanish, the latter breed having become strictly a fancier's fowl, where the length and smoothness of the white face was of far more importance than the beautiful large white eggs the hen shelled out. The Minorca also appeared on the scene shortly after and put the final kibosh on the Spanish, as Minorcas proved prolific layers of large white shelled eggs.

It was in the eighties that "Jersey Leghorn" and "White Leghorn Eggs" began to appear mote frequently in the New York markets, although all white shelled eggs, whether laid by a Leghorn, Houdan, Minorca, Ancona or Hamburg were sold as White Leghorn eggs. New Jersey was the pioneer state in this White Leghorn industry and ranks today as probably the greatest Leghorn state in the Union, in the commercial value of the eggs, as well as in the quantities produced annually.

In Europe, Denmark has been actively engaged in the production of high-class eggs, the Danes being strongly inclined tc favor the Buff Leghorn, which they can justly claim to have originated. But the Danes go in for uniformity in size, perhaps more than they do for color, se-



"QUEEN."

A blue ribbon winner at Boston and a typical S. C. Black Leghorn female with excellent color in all sections. Owned by Turtle Point Farm, Saratoga Springs, N. Y.

lected brands of Danish eggs weighing 28 4-5 ounces to the dozen, while the average weight of first class Leghorn eggs in this country will run 24 ounces to the dozen, and it is the 2 ounce white egg that seems to be most popular and profitable, and in this respect the white egg is King and the Leghorn hen is Queen.

New York Hotels Favor White Eggs

The great hostelries of New York were not slow to realize the value of white shelled eggs for the breakfast table, and to them many Leghorn breeders owe their start and success as commercial egg farmers. Knapp Brothers, whose beautiful White Leghorns started the poultry fancy twenty years ago with their winnings at America's leading shows, were among the first poultry raisers in the Empire state to engage in the production of White Leghorn eggs for the New York hotel trade, although James Forsyth, a well known Leghorn and Houdan breeder in those days, also shipped eggs from his farm at Owego to the Gilsey House, the Knapps sending their product to the Fifth Avenue Hotel, if we are not mistaken. The prices for strictly choice Leghorn eggs at that period ranged from 25 cents to 45 cents a dozen in case lots.

Other hotels followed suit and began to make contracts with the Leghorn breeders in New Jersey and New York for regular supplies of white eggs, but at the old Ashland House, the headquarters of the poultrymen in New York for many years, Mine Host, Brockway, stood pat with his famous brown eggs (and excellent eggs they were), the best Mr. Brockway could buy from New England egg farms.

California Egg Farms

But New York is not alone in the white egg field. The demand for fresh white shelled eggs is becoming general in all parts of the country, the Pacific Coast being especially partial to them, the Petaluma district in California being one great white egg market, in fact California is destined to be the greatest Leghorn country of the future, to judge by the reports received from disinterested observers of the commercial egg farm industry in that state.

John F. Ritz, a successful poultry breeder and judge of Pennsylvania, visited the Pacific Coast last winter and furnished us with some interesting data relating to Leghorns in that country. Mr. Ritz writes:

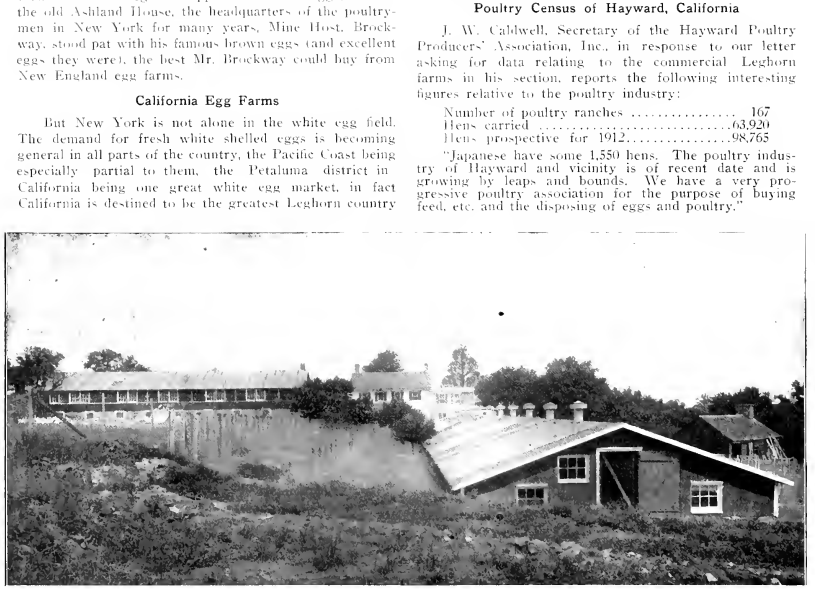
"As to Leghorns, California is the Leghorn state and it is safe to say that 75 per cent of the poultry in that state are Leghorns. In or about Petaluma 98 per cent are Leghorns, and Petaluma is the greatest chicken city in the United States, in fact there is no other business but chickens and poultry supplies in the whole town of 8,000 inhabitants and I believe there are three million Leghorns within a radius of 20 miles of Petaluma. As to figures and prices, will say they sell their old hens by the dozen, they bring from $5.00 to $6.00 per dozen, and pullets $9.00 to $10.00. Eggs bring much more than we get in the East. On November 20th eggs were bringing in Petaluma 54 cents cash and 56 cents on time. I wanted to know what time was and was informed that if the poultrymen wait 14 days for the money they get 56 cents, there is no commission or express off those prices, but cash for all one brings in, and while I was walking about the town I saw not less than a car load of eggs come in on wagons, some had one crate, others two and so on, many of them bring eggs in every day, the same as we do here with milk, and you would very seldom see a wagon in the town unless it had eggs, chickens, feed or incubators on it."

Poultry Census of Hayward, California

J. W. Caldwell, Secretary of the Hayward Poultry Producers' Association, Inc., in response to our letter asking for data relating to the commercial Leghorn farms in his section, reports the following interesting figures relative to the poultry industry:

Number of poultry ranches	167
Hens carried	63,920
Hens prospective for 1912	98,765

"Japanese have some 1,550 hens. The poultry industry of Hayward and vicinity is of recent date and is growing by leaps and bounds. We have a very progressive poultry association for the purpose of buying feed, etc. and the disposing of eggs and poultry."



View on Spring Water Poultry Farm, Stockton, N. J., showing brooder house and runs, and to the left the incubator cellar with laying house above. S. C. White Leghorns are bred on this plant. A glimpse of the residence of Mr. and Mrs. F. J. Eppele, props., is also shown. After visiting nearly fifty poultry farms in America during the fall of 1911, Dr. Schulke, of Trittau, near Hamburg, Germany, remarked: "In a way this plant did not look to me like a poultry farm; it reminded me more of a German Military Station, where everything has its place and everything is in its place."

This is a remarkable showing for a single township to make, the increase of nearly 35,000 hens in twelve months indicating the rapid growth of the business being noteworthy. If other townships in California show the same ratio of increase, the poultry census for the entire state will prove a revelation, as well as an inspiration to poultry raisers of the United States, and more especially so to the advocates of the American hen, who through their earnest efforts and hard work have succeeded in building up a billion dollar industry in the country.

In Colorado and New Mexico Leghorn egg farms are being rapidly developed in order to meet the largely increasing demand for the spotless fresh white egg by the sanitariums in the Rockies and by the grocers and soda water fountain caterers in the cities. One Leghorn farm in New Mexico carries 10,000 layers annually, the eggs produced bringing from 45 to 75 cents a dozen, according to the season. The many sanitariums located in the mountain sections of New Mexico and Colorado are the heaviest buyers of these strictly choice eggs, as the latter form one of the chief foods of the thousands of invalids who winter there in search of health.

White Eggs in the South and East

And southward also the white egg is becoming a great market commodity. In Washington, D. C., and Richmond, Va., White Leghorn eggs command the top notch prices, which has stimulated poultry industry to such an extent that Leghorn farms are being established in large numbers below the Mason and Dixon line. Even in staid old Boston, where the brown shelled egg is esteemed as highly, and valued as dearly as the traditional Boston beans and brown bread, the little white body of the feathered tribe, the Leghorn, is gradually obtaining recognition and white shelled eggs are no longer considered a New York fad, but have found favor with some hotel stewards and in the markets. The story of brown eggs being better than white ones is all moonshine, but originated in England, owing to the fact that dark shelled eggs were preferred to white ones, because the former were home grown, the white ones imported, consequently the brown ones were fresher. Perhaps the descendants of the Puritans and Pilgrims may have inherited this belief from their English ancestors, which may in a measure, account for the popularity of brown eggs in Boston and other New England cities in the past.

Why the Leghorn is Popular

The reason for this great popularity of the Leghorn hen as a producer of white eggs is due to her ability to produce the largest number of marketable eggs at the lowest possible cost of maintenance under varying and trying conditions in all climates.

Being naturally a hardy fowl with a quick, nervous temperament, the Leghorn will respond to the intelligent care and treatment of the poultry raiser more satisfactorily than most other breeds. It will work where other breeds loaf.

Leghorns As Layers

The old saying "The hen that lays is the one that pays" might have been true when applied to farmers' hens that picked most of their living on the farms and in the barnyards, but today with higher prices of grain and a most exacting market as to the quality of the eggs, it is the hen that lays the two-ounce egg of superior quality that pays for her keep and leaves a balance on the right side of the ledger. This the Leghorn hen can do and do well.

In Farmer's Bulletin, No. 51, issued by the United States Department of Agriculture, Washington, D. C., the Leghorns are classed as follows:

"Leghorns are the best known of the egg producing varieties of the Mediterranean class. They are the premiers in laying and the standard by which the prolificness of other breeds is judged. The Leghorn fowl holds the same place among poultry that the Jersey holds among cattle. The question of profit in poultry has been decided in favor of the egg producing breeds. Leghorns are lively, active and of a restless disposition, the best of foragers and will pick up a good deal of their living during the year. They are light eaters and the cost of raising them to maturity is about one-half of the Asiatic varieties. They mature early and feather quickly, the pullets often begin laying when four and a half months old. They are the best of layers, averaging between 150 to 200 eggs a year. These eggs are pure white in color and weigh about ten to the pound. As table fowl they are fairly good; by many they are considered excellent; the only thing that can be said against them is that they are small in size. Altogether, they are one of the most profitable breeds of poultry that can be kept on the farm, and the cheapness of their keeping will allow the raising of two Leghorns for the cost of one Asiatic. The White Leghorn is the most generally bred of the Leghorn varieties. It is, no doubt, the most advantageous to breed for profit and the easiest to raise on the farm. Being of one color in plumage, these birds are more successfully raised and cared for than the parti-colored varieties. It has been a matter of much speculation as to which variety of Leghorns is most prolific in egg production. This is a difficult question to adjust properly to the satisfaction of the specialty breeders, but from a conservative standpoint, it is generally considered that the Whites have slightly the advantage over the others. Phenomenal individual egg records have been made by almost all varieties, but the foregoing opinion is based upon the general results obtained from various sources."

When Leghorns are kept under intensive culture on commercial egg farms, the results will even be more satisfactory than the above summary of the value of farm raised Leghorns as layers goes to show. Eggs from such egg farms are larger in size, in fact, will often exceed 2 ounces each, but the marketable eggs will average eight to the pound in most flocks. As a Leghorn hen will, when

No. 1—4489
Laid 229 eggs

No 1—4492
Laid 209 eggs

No. 1—4497
Laid 221 eggs

No 1—4499
Laid 248 eggs

selected from a laying strain, shell out twelve dozen eggs a year, a good profit will be assured to the keeper, provided he can keep his expenses within reasonable bounds and retain the trade that demands and pays for the highest grade eggs. As it costs from $1.00 to $1.50 per capita to feed Leghorns one year, the cost of each egg produced would be a little less than one cent for the feed alone. To this must be added the cost of the labor, interest on investment and shipping and marketing expenses, which vary considerably in different localities and according to the size of the poultry farm.

200 Egg Layers

The "200 egg hen" has been exploited in print so frequently and persistently that the impression has been created that large flocks of White Leghorns exist in which the yearly average of the hens is 200 eggs per capita. That individual Leghorn hens have laid 200 eggs in one year is true, and some specimens have even done much better than that, but these are the exceptions, not the rule. That at some future time flocks of Leghorns will be bred to lay 200 eggs per hen annually seems reasonable to suppose, as by continued and careful selection of the best layers, the producing capacity of the flock will be gradually increased to the limit consistent with old Dame Nature's laws.

Personally, we believe a safe and profitable limit to be 150 eggs per annum, these eggs to be produced at a season when eggs bring the highest prices. Hens can be forced to reach this limit and have sufficient time left to moult and repair the strain to the system caused by continuous heavy laying.

Building Up a 200 Egg Strain

What we, in our opinion, consider the first systematic experiment to build up a strain of 200 egg layers, was begun by Charles Adair at the Cyphers Incubator Company's Farm, Elma, New York, several years ago. Mr. Adair, who has charge of the latter, is a most enthusiastic, hard working and painstaking poultryman, one who has the true Missourian creed of "I want to be shown." In other words he takes nothing for granted, but wants the facts to prove his case.

A little over two years ago he purchased four hundred White Leghorn hens that had a pen average of laying 185 4-5 eggs per capita in one year. He has now 167 hens, two years old that by trap-nest method have laid 200 eggs each or better. One hundred and four of their daughters (yearlings now) in 10½ months averaged 180 eggs each. On December 1, 1911, Mr. Adair had 600 pullets bred from the "200-egg hens," besides a large number of cocks and cockerels of the same blood. The experiments will be continued on a large scale each year and the matings will be confined to the same line of blood, i. e., the males from the most prolific laying dams will be mated to hens that have made records of 200 eggs or over and to their pullets.

The illustrations on this and pages 109, 111, 112, are from photographs of the most prolific layers on the farm. The laying record made by each is printed below. The latter are remarkable in showing what can be accomplished by intelligent and scientific selection of hens that have equalled or passed the 200 egg per year mark, in having this egg laying trait perpetrated in their progeny.

The building up of the great milk and butter strains of Jersey and Holstein cattle was founded on the careful selection of the cows that produced the largest milk and butter records, and breeding them to their sires that descended from dams of known or equal proficiency in this respect. "Like begets like," an old and true saying, is even more potent in the transmission of the practical producing qualities of animals than it is in the breed characteristics of type and color.

But as far as poultry culture is concerned, this great law has not received the attention or intelligent application from poultry breeders which it deserves.

No doubt it will take more time, patience and perseverance to select the "hens that pay" than it does to select the heavy milkers, but in the end it will prove the most profitable business a poultryman has ever undertaken.

The feed the "200 egg hen" consumes is not much greater than that of the one that lays an even hundred or less.

Remove the drones and keep the busy bees—the layers.

Retail Prices of Eggs

One of the shrewdest, oldest and most successful poultry breeders in the United States, a man who has made a fortune in breeding one variety of poultry, recently remarked when questioned as to the poultry business being overdone, "Why, it has not begun yet."

And in no other branch of the poultry industry is this more observable, applicable than in the egg business. The latter is still in its infancy. Fresh eggs at this writing (December, 1911) are at a premium. This is especially so with the higher grade of eggs as the following prices marked by the leading retail grocers in New York will show:

New York, November 22, 1911.

Acker, Merrill & Condit

Selected .....40 cents
Maplehurst Fresh .....51 cents
Germless White Leghorn.....73 cents

No. I—4462
Laid 248 eggs

No. I—4464
Laid 226 eggs

No. I—4466
Laid 237 eggs

No. I—4468
Laid 203 eggs

Park & Tilford

Ordinary	48 cents
Extra Fresh White	68 cents

Charles & Co.

Very best Leghorn	70 cents
Fresh	56 cents
Selected	52 cents
Ordinary	36 cents

The range of prices given above points out the relative value of the different grades. These prices are somewhat higher than in 1910, although the price of guaranteed fresh White Leghorn eggs has not changed materially in the past few years, as the demand is far greater than the supply. The germless brand of White Leghorn eggs seldom drops below 70 cents in the fall and winter months. Germless eggs are sterile and are conceded to keep better than fertile eggs. The latter will spoil quickly when subjected to a temperature of 85 or more degrees for any length of time.

Where eggs are sent to hotels and first-class retailers, the price for fancy strictly White Leghorn eggs will bring in case lots as high as 40 cents a dozen the year around.

In Buffalo, New York, the retail prices of eggs on December 1st, were as follows:

Western storage, 24 cents per dozen.
New York State (storage) 32 cents per dozen.
Fresh eggs in cartons, 55 cents per dozen.
Extra selected strictly fresh, 60 cents per dozen.

Single Comb White Leghorn Hen. Laid 238 eggs in one year.

The extra selects are nearby products that are received every other day, the fresh eggs in cartons being received weekly. One of the leading department stores reports a great scarcity of strictly fresh eggs on this date, only small consignments of five or six dozen being received occasionally. These sell readily at 50 to 55 cents per dozen. Last year this firm paid 50 cents per dozen for strictly fresh eggs—guaranteed and retailed them at 55 cents per dozen. It is fair to assume then that 55 to 60 cents per dozen for fresh laid eggs are the ruling prices in Buffalo at this season of the year. Germless White Leghorn eggs, however, rule as high in price in Buffalo as in New York, but the production of this brand of eggs is limited to one large poultry farm at present in this section of the Empire State. Several new Leghorn egg farms with large egg producing capacity have been started in the vicinity of Buffalo in the past year and when these large plants are fully stocked with White Leghorns next season, the supply of high grade white eggs will be materially increased. No doubt but the demand for eggs will increase in the same or even greater ratio as the supply.

Single Comb White Leghorn Hen. Laid 242 eggs in one year.

Wholesale Egg Prices

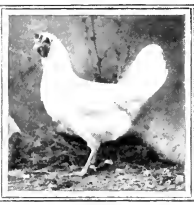
Following are the wholesale egg quotations on December 4, 1911:

	Per doz.
New York, fresh gathered extras	42 to 44c
Philadelphia, Pennsylvania and nearby firsts	36 to 44c
Chicago, firsts, grading 45 per cent fresh	28 to 30c
St. Louis, extras	34 cents
Kansas City, extra	34 cents
Boston, fancy eastern	48 to 50c
Indianapolis, extra fresh	35 cents
San Francisco, firsts and fresh ranch extras	45 to 51c
Petaluma, extras	50½ cents

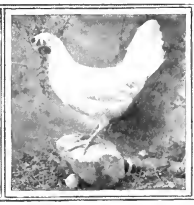
As the latter city is the center of the White Leghorn egg industry in California, the following table of shipments for one week will convey some idea of the extent of the egg business in that city.

1911	Eggs Dozen
Monday, November 20	12,888
Tuesday, November 21	20,808
Wednesday, November 22	13,068
Thursday, November 23	12,528
Friday, November 24	15,084
Saturday, November 25	14,760
Total	89,136

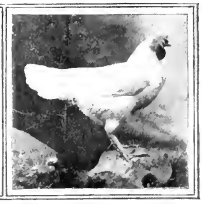
No. I—4470
Laid 248 eggs



No. I—4479
Laid 231 eggs



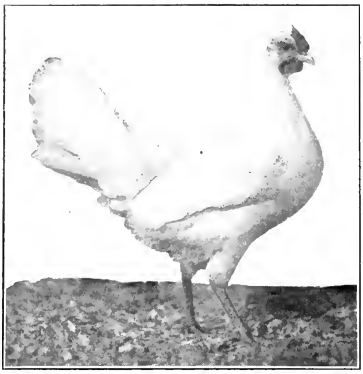
No. I—4481
Laid 218 eggs



No. I—4486
Laid 216 eggs

The cash value of these shipments will exceed over $40,000 for the week, a most gratifying demonstration of the far reaching importance of co-operative organization among producers for the purpose of marketing their products in the best possible condition to realize the highest prices.

We have quoted the highest prices obtained in the retail and wholesale markets of the United States for the best grades of eggs only, as a progressive farmer or practical poultry raiser should aim to produce and market



"JOSEPHINE."

First R. C. White Leghorn pullet at Chicago and Boston, 1911. Owned by Turtle Point Farm, Saratoga Springs, N. Y.

only the best. It means a difference of twenty cents per dozen to those who deliver the right kind of goods, as the quotations for ordinary mixed eggs of uncertain age and doubtful quality will range from 20 to 30 cents per dozen below those of prime or fancy quality. The commercial egg trade conducted in the large markets of the United States is a business requiring the keenest judgment on the part of the buyer and seller.

The Egg Trade

From the "Grocers' Encyclopedia," one of the most valuable and authentic books of its kind, we reprint the following comprehensive article on the egg trade:

"The original owners of the eggs know as little about the history of their distribution as do the men and women who finally devour them.

"To these first and last persons who handle the product, the eggs are either good or bad, and there's an end on it. But to the man who handles them between the farm and the breakfast table they are Fancy, Fresh, Fresh Gathered, Storage Packed, Storage, Limed, Known Marks, Extras, Firsts, Seconds, Dirties, Checks, etc. The distinctions become very necessary when one realizes that practically the whole enormous egg business is conducted by telegraph and that the dealer who purchases a carload of eggs has no opportunity to examine them until they arrive.

"With the exception of those which, because of their proximity to a large city, can profitably be shipped by express, eggs always travel in refrigerator cars—winter as well as summer, for the heavy construction of the perambulating ice chests is equally serviceable for protection against cold and heat. One carload contains four hundred cases, or one hundred and forty-four thousand eggs.

"On large poultry farms, eggs are produced and handled very much as the product of any other factory—the poultry man knows his cost of production by dozen or case—but the greater part of the country's egg supply is still represented by accumulations from thousands of general farmers scattered all over the country.

"The history of one of these farm eggs reads like 'a gathering of the clans.' The hen that laid it may be the property of a small farmer in a Western state, located fifty or a hundred miles from the nearest good-sized town. The egg is one of a dozen that the farmer takes to the nearest village store and either sells for a small sum of money or barters for sugar, calico, tobacco or some other commodity that he needs more than he needs eggs.

"Other farmers in the neighborhood are doing the same and the store is thus the recruiting station for a goodly company of eggs that must necessarily find a market somewhere else. These eggs are sent to a larger center, where they pass into the control of a large or small shipper who mobilizes them, to continue the figure, no longer by companies but by battalions, regiments and armies—i. e., carloads.

"When the shipper has a carload of eggs ready for the eastern market, he telegraphs the fact to an eastern dealer. A certain amount of dickering goes on over the wire, and the eggs are finally sent East. The eggs are not though for immediate consumption, hence the necessity for the refrigerator car and the storage warehouse to retain the condition in which they were purchased.

"Comparatively few eggs are found to be bad, and all shipments are now sold 'at mark,' a technical way of saying that a case of eggs at wholesale is supposed to be within a small percentage of the requirements or standard of each grade, and there is no rebate for damaged eggs. Formerly there was a rebate during a part of the year that was called the 'loss off' season, because a certain percentage of the eggs were not expected to come up to the standard of the various grades.

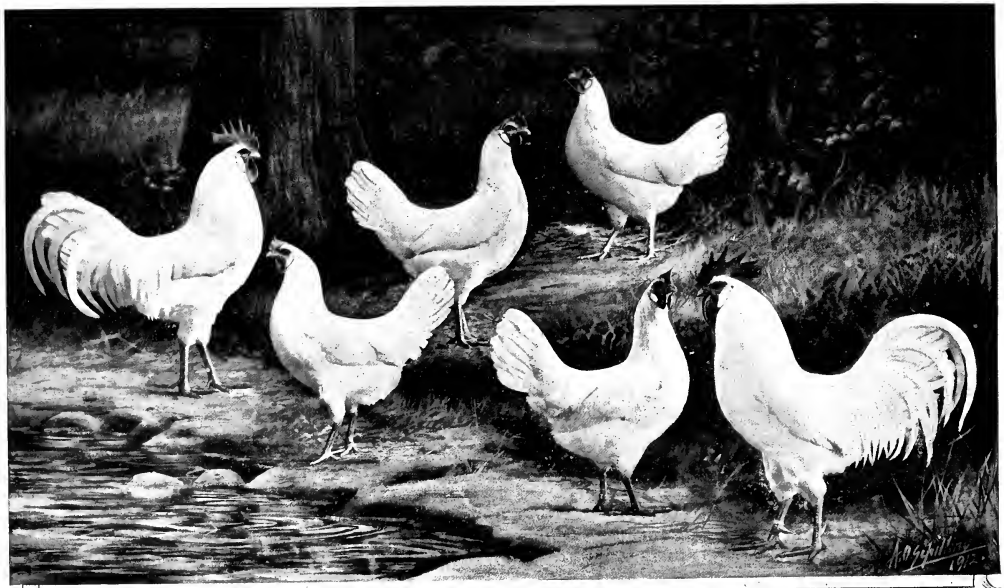
"There are very few disputes between shippers and dealers that are not settled peaceably between the persons directly concerned, but occasionally they form the basis of expert examination by either the Chamber of Commerce or Fruit and Produce Exchange inspectors, sometimes, indeed, getting as far as the Arbitration Committee."

No. 1—4457
Laid 238 eggs

No. 1—4458
Laid 219 eggs

No. 1—4460
Laid 241 eggs

No. 1—4461
Laid 227 eggs



SINGLE COMB WHITE LEGHORNS FROM FIRST AND SECOND PRIZE PENS AT GRAND CENTRAL PALACE SHOW NEW YORK DEC. 1911.
Bred And Owned By DUNE ALPIN POULTRY FARM EAST HAMPTON NEW YORK.

The Grace and Beauty of the Modern Leghorn is Well Shown in the Exceptional Specimens Shown Above.

Care in Selecting and Shipping Eggs

To produce the strictly fresh and choice white eggs that command the top notch prices in the best markets is a serious business, requiring honesty of purpose and a thorough knowledge of the art of feeding and handling of the laying stock to obtain the best results. An egg must be above suspicion, for like butter, it is easily tainted if improper food and unsanitary conditions are tolerated by the producer. For it must be borne in mind that the eggs that bring the highest prices furnish the substantial portion of the morning meal in many instances, while they are often the chief food given to invalids in sanitariums. Such eggs must not only be absolutely fresh, but palatable as well.

An egg is an egg with the majority of people and as long as it is edible, it will pass without any serious loss to its reputation as an article of food. But there are thousands of consumers that know the difference between the fresh, rich and fine flavored egg and the ordinary storage or badly handled farmer's eggs.

We had considerable experience in the egg business twenty-five years ago catering to private families and a hospital in New York City. It was a side line with us, while engaged in dairy farming in New York State. As our own flocks could not supply the demand for strictly fresh eggs, we made contracts with farmers and small poultry raisers in our vicinity to deliver strictly fresh eggs twice a week, paying five cents a dozen above the market price for all such eggs.

We experienced little or no trouble in getting the producers to live up to their contracts, as far as the smaller poultry raisers were concerned, the latter being principally women, who took great care of their poultry and could be depended on to get even a good supply of fresh eggs from their hens in October, November and December, when eggs were at a premium. The hens kept on these small plants were principally White and Brown Leghorns, but with our easy going neighbors, the farmers, we had more or less trouble. We could not always depend on their delivering the goods as per agreement, especially in the fall of the year, when their hens failed to shell out the required number of eggs. It was at such times that we were compelled to examine the eggs very closely, as some of our neighbors would work off the eggs salted down in the summer months, for fresh ones supposed to have been laid in the fall. Neither could we always depend on the fresh laid eggs being carefully and systematically gathered on such farms. It was the old story of the farmer who would give his horses the best of care, feed and groom his cows to produce the cleanest and richest milk, yet allow the hens to shift for themselves.

Yet the gross profit per cow would rarely exceed $25 per annum, whereas a flock of twenty-five Leghorns would pay him a net profit of twenty-five dollars a year, even at the lower prices of eggs in force twenty-five years ago.

The Cause of Poor Eggs in Our Markets

This indifference of the farmer toward the hens on his farm, is the cause of the thousands of dozens of poor, stale and unattractive eggs finding their way into our markets. Commission dealers have been justly censured and fined at times for disposing of "rots and spots," but in order to get a supply of the latter, there must be a source, and it needs no Sherlock Holmes to discover the latter.

An egg gathered the day it is laid will keep in edible condition a very long time if kept in a temperature not exceeding fifty-five degrees to sixty degrees. With our excellent cold storage plants eggs that are sweet and sound when placed in the latter, will be found fit for consumption months afterward.

There can be no reasonable excuse then for the existence of the "rots and spots" and all other kinds of stale eggs in our markets.

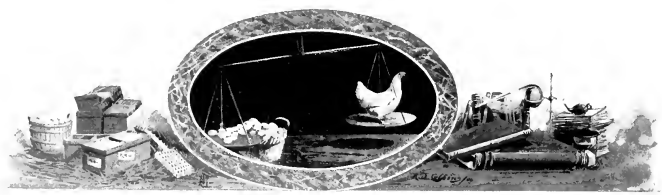
We believe the commercial Leghorn egg farms of the United States to be indirectly responsible for the gradual higher standardization of the American egg trade. The men who have engaged in this industry have built up large plants, equipped them with thousands of White Leghorns and found a most profitable market for their products.

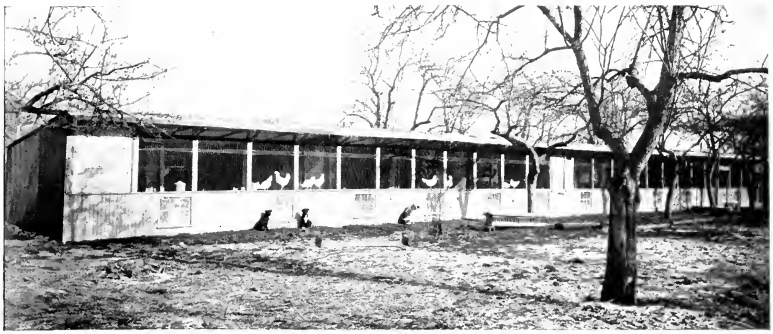
The smaller poultry raisers have taken their cue from larger ones and better, cleaner and more uniform products are the result.

The farmers of this country are slowly beginning to realize the value of applying intelligent methods in handling their poultry products, thanks to the good work done by the agricultural and poultry press and agricultural experiment stations.

What the thrifty Danes did in building up a great cooperative egg trade, that has made the Danish egg almost as famous as the Danish butter, can be accomplished by the farmers of the United States.

In the succeeding articles of this chapter, the methods of successful commercial Leghorn farmers are given. They will bear most careful study by all persons interested in making poultry pay, and pay well. What applies to Leghorns as profitable producers of eggs and squab broilers will apply with but little modification to all other laying breeds. It's the quality of the product, rather than the source of it, that determines its market value.





A POPULAR STYLE OF POULTRY HOUSE IN THE VINELAND, N. J., DISTRICT.

In this tract, which has become noted for the number of White Leghorns kept for egg production, every individual plot of ground, whether town lot or farm, seems to have its flock of White Leghorns. Naturally it follows that the poultry houses and appliances are, as a rule, very simple and decidedly practical. The house illustrated herewith is on the poultry plant of Ed. R. Hutchinson, Vineland, N. J. It is 15 by 100 feet and contains 5 pens 15 by 20 feet. It holds 500 White Leghorns. Most laying houses on the Vineland tract are of the "continuous" type. Many of the new houses are being built with a hood roof.

White Leghorn Farms of Vineland, N. J.

Fortunately Situated Within Easy Distance of the Greatest Markets in this Country, Possessing an Excellent Climate and Suitable Soil, Vineland, N. J., is Establishing a Reputation for Marketing Prime Quality White Leghorn Eggs That Bring a Premium Over the Highest New York Prices. Wholesale Production of Eggs in a Retail Manner. Co-Operative Selling of Market Eggs.

F. L. Platt

VINELAND is situated in southern New Jersey on the border of the pine belt, and the wind coming from the north carries the aroma of the woods and is tempered by the trees in its coming. Vineland lies between Delaware Bay and the seashore, and the warm gulf stream that flows up the eastern coast gives to this region a mild and equable climate. The soil is sand—there can be no doubt about that. There is white sand, and yellow sand and blue sand frosted with white. This was once a part of the prehistoric bed of the Atlantic Ocean. The ground quickly becomes barren when chickens run on it, but it does not become tainted because its porous nature permits it to cleanse itself like a sieve filled with water.

The city of Vineland itself covers a square mile, but what is known as the "Vineland tract" embraces the whole of Landis township. Within a radius of three or four miles from Vineland City S. C. White Leghorns are kept for the production of eggs on almost every individual plot of ground. During a drive through that community one day I saw more poultry houses than I had ever seen before in a much longer journey among poultry farms. The secretary of the Vineland Poultry Association estimates that there are over eighty-five thousand White Leghorn hens and pullets on this Vineland tract. The different flocks range in size from a few fowls kept in back yards to one plant where two thousand birds are kept.

The Different Methods Employed

Poultry culture is becoming more and more of a science. The experience of different poultry keepers is recorded and classified. Poultry operations may never be conducted with absolute certainty, for unknown causes will continually be potent factors with which it is quite impossible always to cope successfully. However, today an experienced poultryman can forecast the result of the season's work with greater certainty than ever before. As fundamental principles that make for greater certainty of results are being established one by one, it behooves the poultryman to keep in touch with the progress of the times and to avail himself of the results of the experience of others.

At Vineland I noticed that all the poultry houses admitted sufficient sunlight and a plentiful supply of fresh air. The value of these two free gifts of nature has been established and is thoroughly appreciated by successful poultry raisers. The realization that fresh air and sunshine are necessary to the health of fowls has had much to do with the change from the days of tight houses, when the Leghorn race of fowls was looked upon as a tender breed, to the present time when the Leghorn is considered to be a hardy bird.

Aside from the fresh air fronts, the poultry houses at Vineland are built either according to the preconceived ideas of the owner or after the pattern of poultry houses

that are in operation on successful and well-known plants. There are a great many long laying houses, most of them being divided into pens. In some cases these pens are small; but the majority of them hold 100 birds each. In houses that are wide as well as long, some of the pens hold four and five hundred birds each. One of the large houses measured 100 feet in length and 36 feet wide. This was divided into three pens each 33 by 36 feet.

On some plants colony houses are used, the Tolman house being the favorite. Because of the heavy winds from the sea, a small and high colony house cannot stand long before being blown over. The long laying houses are seldom less than 15 or 16 feet deep and have canvas fronts, in order that the birds may be protected from the winds. The Tolman houses, wide open in front, are often elongated for the same reason and so little snow falls in the winter that the roof flattened with the added depth easily bears up under the light weight.

On page 115 we show a long laying house on the plant of E. R. Hutchinson, Vineland. It is 15 by 100 feet in size and is divided into five pens, 15 by 20 feet, each holding 100 birds. Mr. Hutchinson was the first to use the hood-roof which projects over the front of the house, but recently several houses like it have been built. It is essential if the roofs of the buildings are covered with roofing paper that the best quality be used, as the winds from the south coast soon tear off cheap paper.

A VINELAND, NEW JERSEY, FLOCK OF WHITE LEGHORNS

A view of a flock of White Leghorns on the 2 2-3 acre poultry plant of Paul Van Deusen, Vineland, N. J. In 1910 Mr. Van Deusen's gross receipts were $3,733.02 from his poultry and garden and his feed bills totaled $1,283.22, leaving the balance as the income on his investment and as recompense for his year's labor. For the type of Leghorn grown at Vineland see cut page 117.

Dry Mash is Hopper Fed to the Layers

The methods of feeding at Vineland do not vary as much as the contents of the feeds which vary with the individual. In every pen on every farm you will find dry mash. It may be fed in a Boston hopper, or in a home-made wooden hopper or in an open wooden box, but it is there before the layers constantly and they have free access to it. Vineland poultrymen will tell you that this hopper fed dry mash is so vitally important to success that it may be laid down as the first principle of feeding for egg production.

J. W. Scull, one of the pioneer White Leghorn egg farmers of the Vineland Tract, generously gave me his mash formula, which is as follows: One portion each of bran, cornmeal, rolled oats, white middlings and beef scrap, one-half portion each of charcoal and grit. This is thoroughly mixed and fed dry by being placed in hoppers, which are accessible to the birds at all times. At night Mr. Scull feeds cracked corn and oats in the proportion of two parts of the former to one of the latter. These grains are mixed and fed in the litter, allowing one quart to every twenty hens. By far the majority of poultrymen on the Vineland Tract feed wheat at night. Mr. Scull does not, however, as he aims to feed the wheat in his dry mash in the form of white or flour middlings. The white middlings, he said, cost him $1.80 per 100 pounds. As it is not unusual on the Vineland Tract, Mr. Scull does not feed his birds any breakfast, so it will be seen that he feeds his birds but once a day, which is about 4 P. M. when the grain is scattered in the litter. Of course the birds have access to the dry mash at all times.

Vineland poultrymen aim to minimize labor. This economy of labor does not arise from an indifferent or lazy spirit. They are economical at every turn—in the construction of their poultry buildings and in their feed as well as in their labor. A poultryman should not be too busy. He needs time to watch his birds, to consider, to plan and he should not be carrying food and water all through the day.

Past and Present Vineland

As I stood in Mr. Scull's yard, at the outskirt of the city, I could see two other poultry plants across the commons, another was on my right, and I said to Mr. Scull. "How many White Leghorns are there within a radius of a mile from your home?" After carefully enumerating the flocks of his neighbors he replied, "I can safely say there are 15,000. Mr. Scull said further that when he settled in Vineland ten years ago there were but two flocks of White Leghorns on the Tract. Five years ago the birds numbered 7,000 to 9,000. Vineland, as a great White Leghorn community, is of recent growth. Its rapid development has been made possible by its 100-mile distance from the New York market and its sandy soil and mild climate. While it is true that these three factors, so necessary to successful egg farming, existed, nevertheless the development of the Vineland Tract as a Leghorn country should be attributed to the real estate operators. A real estate man in Vineland told me that his firm is spending $50 a week advertising Vineland and that it has been doing so for several years. The Tract is advertised as a great poultry, fruit and garden truck country and I was told that lately nine out of every ten people who buy a place in the district raise White Leghorns for egg production.

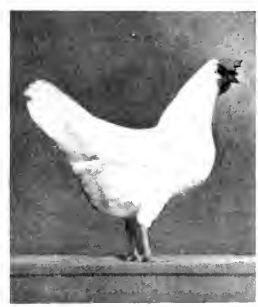
Those who are already in Vineland have a remunerative market for stock males, for yearling hens for breeding purposes, for ten-week old pullets, for eggs for hatching and for baby chicks. The new comers buy them and their sale adds to the "commercial income" and gives the owners a handsome profit, but those who are going into the district should figure their profits as the difference between the cost of production and the selling price at the New York market. I am especially interested in those beginners who, perhaps leaving the city and the

office, seek the profits of egg farming and the quiet and freedom of the country. The future greatness of the Vineland Tract depends upon their individual success.

Market Conditions for New Comers

Many of the already established egg farms on the Tract have a select market to which they have catered for several years and being individually known they secure the highest New York quotations and oftentimes two cents per dozen over the New York price. In turn they sell their yearling hens after they have passed the pullet year as "breeding stock" at $1.25 per head. They have other sources of income from their poultry, such as eggs for hatching, baby chicks, etc., and are making about all the money possible out of their products. But the new comer, what of him?

If, as a poultryman, I anticipated embarking in egg farming down at Vineland and I should go there to look the ground over, I would not be particularly interested in the types of houses I found, nor would I inquire at length into the feeds and methods of feeding employed there, for I have my own opinions on those subjects, but I would inquire into the market for my products. I would realize that after I had produced the eggs I would have to sell them and every time I increased the selling price one cent it would be a whole cent of profit to put into my pocket. If upon inquiry at Vineland I should be told that there are markets in New York to which I could cater individually, it would not appeal to me particularly, for I could go to Lakewood or some place else and still cater to those markets, but if I should say at Vineland, "My success depends upon the markets," and I should be told "The Vineland Poultry Association has an outlet for you," that would mean a great deal to me and I would inquire into that outlet to learn how it is secured and the prices obtained for the producers.



TYPICAL UTILITY WHITE LEGHORN

A White Leghorn pullet which we picked from a flock of utility birds in the Vineland, New Jersey, White Leghorn district. This pullet shows the good size characteristic of the Vineland "egg machines," also the long body and well developed posterior section, which gave her the appearance of a hen. Of course she was a carefully selected model. At their last show the Vineland Poultry Association introduced a "utility class" and premiums were given on live utility poultry. By experimenting and the competitive comparison of the birds exhibited the association plans to increase the number of birds of that type which give the best results to the average producer.

Small individual producers are given little consideration. They cannot make the money that a big producer can. If the buyer has to hunt up three or four producers to secure enough for a shipment, he will not pay as big a price as though he could have been saved the trouble by buying in one lot. Note the small stores in large cities. Not much buying is done in them, for the people seek the large market places. Though a White Leghorn farm at Vineland may carry 700 to 1,000 layers, its shipment of eggs when it reaches New York is as a handful of sand on the beach.

Through co-operative marketing, however, the Vineland output of eggs is a factor to be reckoned with. Shipping together through a common outlet, the Vineland producers can supply 15 crates of strictly fresh eggs at any time with no advance notice. The Vineland product goes forward with a "force" because it is numerically strong and it is an efficient and influential force because "Vineland eggs" stand for eggs that have been graded as to color and sorted as to size and, most of all, produced on up-to-date, clean poultry farms and were laid by thoroughbred hens that have been fed sound grain and last, but not least, these eggs are marketed while strictly fresh.

All this means that when Vineland eggs are quoted at a fair premium above the highest New York quotations they still find a ready sale, for buyers know the worth of the Vineland product. Vineland eggs can be printed on the menu cards of the hotels and the proprietors profit thereby, for these eggs can be eaten with a relish and without fear. An advertised and premium commanding output of this kind would make the Vineland Tract appeal to me if I were a beginner seeking a location. To furnish an outlet of this kind is what the Vineland Poultry Association is working for today.

Co-operative Marketing At Vineland

The poultry association at Vineland is composed of some 200 members and it is incorporated. As an association it is marketing the eggs of those members who wish to enter the co-operative arrangement. The hard work the officers are doing is a tribute to their earnest desire to make a greater and more successful Vineland Tract.

It ships the eggs under its own name and positively guarantees them, thereby establishing a reputation for the Vineland products, which eventually will prove to be an asset to the whole Vineland community. They can thereby increase the profit on eggs produced by the Vineland poultrymen. Through the intrinsic value of their eggs the association is making the name "Vineland" synonymous with freshness, cleanliness and purity. I use these three words advisedly. An egg can be fresh, its shell clean and if laid by a healthy hen that has been fed sweet grain, it is pure. Already there is one commission man in New York who, I was told, handles some of the output of the Vineland Association and does not charge a commission for doing so.

The eggs which the association ships are brought to the association's egg exchange which is located on East Avenue, Vineland. These eggs are brought in on Mondays and Thursdays. At the exchange they are candled for blood spots, etc., by a candler in the regular employ of the association. He then sorts the eggs as to size and they go forward as "No. 1 White Hennery" and "No. 2 White Hennery." They are graded as to color, the white, cream and brown shelled ones being shipped under their respective classification. All this is done to establish a reputation for Vineland Poultry Association eggs, for a known standard of quality is essential to obtain higher than the highest New York market quotations. It is estimated that when the maximum capacity of the egg exchange is employed, the cost of this work is one-half cent per dozen. It seems to me that the time that it saves the poultryman which he can devote to other work, is alone worth this cost.

The eggs are shipped under the seal of the Vineland Poultry Association with the contents of each case plainly marked on the label. When the case is opened the label is broken. The eggs go by freight, leaving Vineland at 4:45 P. M. and reaching New York in time for the 2 A. M. market the next morning. The express does not give better service and the express rate on a case holding 30 dozen is 44 cents, which, however, includes free delivery at destination. The freight rate is 14 cents and the delivery in New York is 10 cents. The cases are not returned and they cost from 12 cents to 15 cents each.

In 1910 when the co-operative plan was inaugurated, the association collected the eggs by wagon. Including the cost of the driver, the maintenance of the exchange where the candling was done, the crates and packing, the service was estimated to cost the producers 3 cents per dozen for the eggs they shipped. After several months of operation, however, the cost was found to be less than that, or $.0278 per dozen. Starting in the middle of January, 1909, and continuing until the middle of May, 1909, when the wagon was abandoned and the eggs were delivered to the exchange by the poultrymen themselves, the total gross receipts of the association were $12,523.14. The average price per dozen received was $.2698. I thoroughly believe that the co-operative marketing of the well-produced, carefully graded and sorted product will increase the income on it.

The best markets in America are near Vineland. New York is 115 miles away; Philadelphia 34 miles and the Jersey coast resorts, including Atlantic City, are on the right hand. The summer hotels along the coast should mean pretty nearly winter prices throughout the summer months when the cost of producing eggs is the least of all the year. The success of the beginner at Vineland, as elsewhere is ultimately dependent on the outlet which he can secure for his products, and at Vineland through combined marketing, the association can be inquiring into these great egg markets, while the poultryman devotes himself to securing heavier egg production.

When the Layers Pass Their Prime

In addition to eggs, there are two other products that an egg farm has to market—hens and cockerels. When the birds have passed the accepted period of prolific laying, they are sold. Trapnests are not employed on utility plants and no doubt oftentimes a hen is marketed that would be good for some time to come as a layer. I know of one instance of a hen that was said to have laid 1,002 eggs in 7 years. If she had been sent to market the summer following her second or even third birthday, which are the usual killing times, the owner would have been the loser, but when hens are flocked together in great numbers, they are not considered individually. They are "egg machines" hatched in incubators, reared in brooders, put in laying houses in the fall and fed for heavy egg production. When, generally considered, their period of usefulness is over, their carcasses are marketed and younger birds take their places in the laying houses. The hens are usually marketed in August just after the laying stretch that continues through the winter and spring and just before they go into the moult. They net the poultryman from 13 to 14 cents a pound.

SHELTERED WATER PAN.

Fig. 1.—A water pan with a shelter for the use of the growing pullets on the range during the summer. It adds greatly to the comfort and well being of the fowls to have clean, cool water to drink. A good device in use on some of the poultry plants in the Vineland, N. J., Leghorn district.

SHELTERED WATER PAN.

Fig. 2.—This cut shows how the top can be lifted in order to remove the pan for cleansing. It can be filled, if desired, with a watering can without disturbing the top.

The production of pullets and cockerels on the Vineland Tract is about even. Almost all the pullets are saved and almost all the cockerels are marketed. They are grown into broilers as quickly as possible. By August the price drops to 18 cents a pound and cockerels then weigh from 2½ to 3 pounds. Two pound White Leghorn broilers earlier in the season bring about 30 cents a pound. Squab broilers are the most profitable, for the cockerels are then sold when eight to ten weeks old and early in the season bring from 50 cents to 60 cents a pound. If they are plump and properly dressed and their skin is deep yellow a premium of 10 cents is often paid on each bird.

Twenty-four years ago, with the advent of incubators and brooders, Mr. and Mrs. A. P. Arnold went into the broiler business at Vineland. Of late years they have kept White Leghorns for eggs, but because of their long experience in producing prime broilers, I give their feed ration for fattening the Leghorn cockerels into plump broilers. Five pounds of bran, 20 of cornmeal, 10 of beef scrap, 5 of oilmeal, 5 of cotton seed meal, 5 of alfalfa, 2½ of charcoal, 2 of grit and 2 of oyster shell and a handful of salt. This is mixed with a shovel and fed dry in troughs and it is kept before the cockerels all the time. At night the birds are fed all the cracked corn they will eat. It takes two weeks to fatten the cockerels, but "if they do not fatten in that time, let them run again. It is too rich a food to feed longer than two weeks," said Mr. Arnold.

The cockerels on the Vineland Tract are not hatched at a time when they will make the highest priced broilers. They are hatched with the pullets at a time when it is best to hatch pullets intended for work in the laying houses the following fall and winter. Several Vineland poultrymen told me that March pullets are too early hatched for their climate. March hatched pullets lay their first clutch of eggs the following September, starting oftentimes in August. Then in October they start in for a six weeks' "secondary" moult. April pullets are preferred and in the average season they go through without moulting. It seems to be a common opinion that they should

not start to lay much before they are six months old, for if they are force-fed for early egg production and lay at 5 months, they likewise will go into a secondary moult.

While in Vineland I had the pleasure of attending a meeting of the Vineland Poultry Association. At that meeting the cost of producing the pullets was discussed and it seemed to be the general opinion that the sale of cockerels would about half pay for carrying the pullets to laying age. After starting to lay the cost of feed was estimated at from 10 to 12 cents per bird per month. The average egg yield of the flocks was variously estimated at from 120 eggs to 150 eggs per bird per year.

A Successful Vineland Plant

There are on the Vineland tract a number of really successful White Leghorn egg farms. One that interested me especially was that of Paul Van Deusen, who lives at the edge of the city. He has gas for the hovers in his brooder house and running water on h's plant. He has just 2 2-3 acres of ground. The poultry buildings and yards cover 1½ acres. If it were not that the soil is very sandy and birds can be kept on the same ground year after year, I would say that Mr. Van Deusen had too small a plant. Last year he kept 525 pullets and 250 hens. Mr. Van Deusen said that the pullets averaged 165 eggs each during the year. The best ten months of the year the hens averaged 118½ eggs each. This was from November, 1909, to September, 1910. Mrs. Van Deusen, who kept the books, gave me the following figures, which cover the year:

Total receipts $3,733.02
Feed, straw, grit, etc..... 1,283.22

The difference is in the income for the year's work. Mr. and Mrs. Van Deusen do all the work themselves. In the springtime, however, when Mrs. Van Deusen is out with the little chicks, she hires a neighbor to come and help in the house, and Mr. Van Deusen hires a man to whitewash for him each year, also a farmer to plow his garden.

Mr. Van Deusen went to Vineland nine years ago and rented a 40-acre farm. He moved to his city plot five years ago. His income is not wholly from his commercial poultry and eggs, as he has quite a trade among the new comers to the Vineland Tract who wish to "stock up." I mention him in this connection, however, for the reason that he went to Vineland willing to farm it and work hard, and he drifted into the poultry business because the greatest profit was to be derived from it. As a poultryman he has worked hard. Many, I fear, seek the poultry business underestimating the amount of work to be done and the importance of it.

Figs. 1 and 2 shown on page 118 are reproductions of photos taken on Mr. Van Deusen's plant. They illustrate a watering pan and shade cover for the use of the growing chickens on range in the summer time. The pan is of galvanized iron 4 inches deep and 16 inches square and it holds 16 quarts. Mr. Van Deusen said that there was sufficient water in it to last 100 growing birds for one day.

I was interested in a home-made brooder on the plant of J. W. Scull. Brooders resembling this one in construction are in operation on several plants in the Vineland Tract. The top is of burlap tacked to a wooden frame. A 2-inch black iron pipe is used and the fumes

Laying house on the Corning Egg Farm, Bound Brook, N. J., in which 1,500 pullets are housed for the purpose of producing sterile eggs for the New York City Market.

of the lamp rise and pass out through this pipe, which becomes warm and the heat radiates from it into the brooder. Directly over the lamp blaze is an elbow in the pipe, for the lamp sets on the outside of the brooder box instead of underneath it, as is the case with other similar brooders on the Tract. The heat from the lamp rises against the elbow and warms it very much. Over the elbow is a stove-pipe sleeve. The cold air passes in at the bottom of this sleeve and being heated by the warm iron elbow, rises into the hover, thus in addition to the radiation of the heat from the iron pipe, there is a continual supply of fresh, warm air entering the hover. Judging by the chickens I saw in these brooders, I should pronounce it a good one.

When I visited Mr. Scull some of his brooders had not been cleaned for three weeks, but his chickens were good. To the unreflective who visit his plant or some of the other Vineland plants, the methods employed may appear as "crude," but since they produce satisfactory results it seems to me they should be spoken of as being good. Certainly they are well worth the time I spent in inquiring into them.

Egg Farming in California

Petaluma Conditions Favorable for Successful Poultry Keeping. Methods of Housing, Feeding, Incubating and Brooding on Small and Large Egg Farms.

James Dryden

Professor of Poultry Husbandry, Oregon Agricultural College and Experiment Station, Corvallis, Oregon.

POULTRY-KEEPING is not a specialized industry in this country or in any other country. The great bulk of poultry products come from farms where a system of mixed husbandry prevails. The poultry district of Petaluma, California, offers, however, an exception to this rule. It is a district that stands alone. There are special poultry farms in other districts, but there is no district in this country or in any other country so extensively and exclusively devoted to poultry-keeping as Petaluma.

During the past year the poultry farms of that district produced some 80,000,000 eggs, and eggs and poultry shipped from Petaluma had a value of some $2,500,000. The town of Petaluma has a population of about 8,000 people and as many more within a radius of five miles. These people are almost wholly dependent upon the poultry farms.

It will enable us to grasp these figures better if we do a little figuring. If the year's product of eggs were loaded on to wagons, a ton on each, it would make a train of wagons about twenty miles long. If the eggs were placed on the ground in a row, end to end, they would reach from Petaluma to Chicago.

Petaluma, therefore, becomes an interesting field of study in seeking an answer to the question, shall we make poultry-keeping a specialized business? During the past six years I have made three visits to the farms of Petaluma, the last being made in February, 1910.

Examples of Profit-Making

I think I discovered there evidence that shows that special poultry farming is profitable at Petaluma. That does not imply, of course, that it is always profitable or that it cannot be made profitable in any other section of the country. If it cannot be made to pay at Petaluma it is my opinion that it cannot be made to pay anywhere else. Let us discuss this point a little.

It is easier to find evidence of no profit than of profit. You can see the evidence by looking over the fence without looking over the ledger account. One does not have to investigate far to find evidence of failure at Petaluma. Failures are due to one cause and another. I will mention only one cause. The fame of Petaluma has gone abroad as a great poultry district. Undoubtedly exaggerated statements of the money to be made there have been published. At any rate, great numbers of people come to Petaluma from different sections of the country to engage in poultry farming. The price of land shows that there is a great demand for poultry farms. As much as $500 an acre is paid for land near town for poultry farming. Ten miles from town as much as $100 an acre is paid for "chickens only." This shows the demand for land. A great many of those who start in the business there know little or nothing about it, and, of course, many of them fail. There are many such cases. It would be safe to say that there are more failures than successes, but if we can find profitable farms, even though they may be few, it will show that money may be made in the business.

I heard of a great many who were making money. It was sometimes hard to get the evidence. Not many poultrymen keep books or know exactly what they are making. Some few do. Here are a few cases of profitable farming:

On a seven acre farm near town the food bill for the year was $2,203.50, and the eggs sold for $4,455.61. I looked over the books and found an accurate account of the amount of food purchased and the number and value of eggs sold each month. I quote the egg sales for some of the months, showing the best month and the poorest: December, $495; October, $448; January, $250; February, $220. This was the result from 1,500 hens. The work was all done by one man, assisted at times by his wife.

On a farm of ten acres there was an outlay of $2,300 for feed for hens and young stock and receipts of $4,700. The number of hens was 1,800 in this case.

On a farm of over a hundred acres with 6,000 hens there was a profit of over $1 a hen. The food was all purchased and hauled two or three miles from a railroad station. Ten cows were kept on the place. Two men and a boy did all the work.

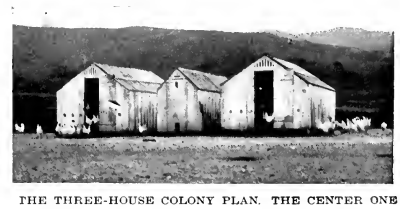
These are well authenticated cases and will serve the purpose of showing that money can be made. There are numerous others, probably just as successful, whose records I did not secure.

Petaluma Conditions

The conditions are very favorable for successful poultry keeping. I know of no place where, on the whole, the conditions are more favorable.

First, I believe the climate to be very favorable. There are few places in the country less subject to extremes of temperature than Petaluma. This is due to the influence of the Pacific Ocean, the coast being about fifty miles away. There is no snow and very little frost. There is no extremely cold weather. On the other hand there is no extremely warm weather in summer. The rainfall is moderate, amounting to 25 to 30 inches—I have not the exact figures. On the whole, the climate is very favorable.

The soil conditions may also be classed as favorable. As a general rule the soil is light and porous. There is good natural drainage, the country being somewhat rolling and in places hilly. Some of the land is somewhat



THE THREE-HOUSE COLONY PLAN. THE CENTER ONE IS THE LAYING HOUSE

gravelly, and the fowls find all the grit necessary in the fields on many of the farms.

Petaluma Methods

Another point that has a good deal to do with Petaluma's success is nearness to good markets. San Francisco, less than 40 miles from Petaluma, is one of the best markets in the United States for poultry products. During the past winter Petaluma poultrymen received as high as 55 cents a dozen for eggs wholesale, and 20 cents, I believe, has been the lowest this year.

Among unfavorable conditions that may be mentioned is the relatively high price of feed. Practically all the feed has to be shipped in, a good deal of the wheat com-

STYLE OF HOUSE ON H. A. GEORGE'S FARM, SHOWING NESTING ARRANGEMENT LID OPEN. HOUSE 8 FEET, BY 12 FEET, 4 FOOT WALL.

ing from Oregon. In this respect Petaluma is rather at a disadvantage compared with most other sections.

On the whole, however, it would be difficult to find any other section of the United States where the conditions are better for successful poultry-keeping, though they may not be ideal at Petaluma.

But climate, soil and markets do not make the poultry farm. They help make it. Poultry will thrive under a great variety of conditions. It is not very often necessary to blame the climate for failure to make profit in the business. At the same time, market and climatic conditions may make a difference between profit and loss, though failures in poultry-keeping are usually due to other causes.

As to the Petaluma methods, I will discuss them in the following order: First, housing; second, feeding; third, incubation and brooding.

Housing

The colony house is practically the only house in use on the farms at Petaluma, and there is a good deal of sameness about their construction. In studying the methods of housing, one of the first questions that came to me was, where did these Petaluma poultrymen find authorities for their methods? It looked to me as though they had been careful to read every poultry book and every poultry paper on the subject and then gone and done the exact opposite. In speaking of housing, I will speak also of land or yarding conditions.

The house may be perfect and yet the outdoor conditions may be such as to bring disaster. I think I could show, if I had time and space, that fowls will thrive in a great variety of houses if the outdoor conditions are right. The house is often blamed unjustly for failures.

The colony house and the colony house system of yarding, in my opinion, has had as much to do with the success of Petaluma as any other thing.

The prevailing type of house, on the small farms, as well as the large, is a house built of a size that may be easily moved by a team of horses. They don't vary much in size, the usual size being about 7x12 ft. or 8x12 ft., with a gable roof. It is built on the box plan of construction, the frame consists of runners to which cross pieces are bolted at the ends, the plates, and four rafters. The siding is nailed on vertically, nailed to the runner and the plate at top. These boards serve to support the sides without studding. In some cases the cracks are battened; as often they are not battened. On one of the most successful farms there the houses are not battened and the owner told me he had no trouble from roup from this cause. He said, however, if he were to close the house up all around and leave one crack for the wind to whistle through he would expect all kinds of trouble from roup. Some use shingles on the roof, while some use "shakes," which are much cheaper. In some cases there is a floor in the house, while in others there is none. One of the best farms I saw had floored houses. The owner said the floors facilitated cleaning.

This house is made to accommodate 100 hens. That means about one square foot of floor space per hen. Here's where they run up against poultry authorities. The "authorities" used to insist on about 10 square feet per fowl. This is the bare fact, however, the large successful farmers consider one square foot per fowl sufficient. Under such conditions, of course, the whole house is taken up with roost poles; that is, the whole space is used for roosting. On some of the farms the perches are run through the house; that is, holes are cut in the siding at each end and the poles rest in these holes; then when the house is to be cleaned out the poles are pushed out and the whole house is clear for the man to work in. I was informed that on a 6,000-hen farm two men could clean out all the houses in a day and a half. This work was done by scraping the droppings from the floor, shoveling them into a sled, scattering lime on the floor and hauling the droppings away.

MR. CARPENTER, CHICKEN RAISER, LEAVING HATCHERY WITH 1,500 CHICKS.

This house is used only for roosting; another house, usually smaller, is used for laying.

The colony system is this: A colony of fowls on the large farms usually means 200 hens. That is, two hundred hens run together on free range at a considerable distance from any other colony, say several hundred yards. They have so much range that the grass is never eaten off the fields. Two roosting houses and a laying house are

THE 1,500 CHICKS AND THE STOVE THAT FURNISHES THE HEAT. THE CHICKS KEEP THEIR DISTANCE FROM THE STOVE.

placed together, the center one being the laying house. The laying house sometimes serves the double purpose of a laying and feed house. One end of the house is partitioned off for a feed bin—a self-feeding bin or hopper. Several sacks of whole wheat are stored in this bin and by opening a door at the bottom the hens are allowed access to the wheat, the practice being to open this bin or hopper in the afternoon for the fowls to eat at will.

The houses are all built on runners, but the plan of moving them does not seem to be universal. On farms that I visited three years previously the houses had not been moved in the interim. In practice, the colony house is not always moved. On some of the farms the land is somewhat hilly and sheltered places are selected for the houses, and they are usually left there rather than move them on to more exposed places. It looked, however, on some farms, as though the houses were allowed to remain without moving as a matter of neglect.

While the house I have described is the typical one at Petaluma and is used on small ranches as well as large ones, there are many other styles. There are houses of cement and houses of galvanized iron; there are cheap houses and expensive houses; there are open-front houses; there are large houses as well as small ones; stationary houses as well as colony houses, as may be seen by the illustrations herewith. But the small house described is used on the great majority of farms, large and small, and it is this house that has given Petaluma its reputation.

The Free Range System

On the larger farms the fowls have unlimited range of grass land or pastures. They have so much range that they cannot possibly eat the grass off. Many of the larger farmers run dairy cattle on the same land to eat down the pasture. The cows, however, are subsidiary to the chickens. On one farm of some 200 acres with 5,000 hens, some 40 Jersey cows were kept, some of them from the most noted herds of the country. The owner, however, informed me that the chickens had paid for the cows and for the large dairy barn on the place. The skim milk from the cows was used for the fowls.

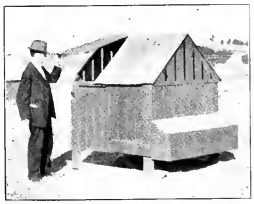
The poultrymen with the large farms are undoubtedly handling the business at greater profit than those on limited acreage nearer town. It may not seem reasonable to say that the man with 5,000 hens on a farm of 100 acres, or even 200 acres, can get better results with the same amount of labor by colonizing his hens all over the farm, than the man with 20 acres and 5,000 hens. The saving of steps by building houses close together doesn't necessarily lessen the labor or reduce the cost of producing a dozen of eggs. It is a question largely of maintaining the vigor and productive qualities of the fowls, and where the acreage is so limited that the ground is kept bare of vegetation the year around, and where the ground is muddy in wet weather and hard and warm in dry weather, the fowls are not under natural conditions; the conditions are more favorable for loss of health or vigor in the fowls. While poultrymen are making money on small farms, it is uphill work compared with the large farms.

Feeding

Some of the methods of housing may shock some of our eastern poultry-keepers and poultry authorities. They are likely to be further shocked at the Petaluma way of feeding. For instance, how often do we read something like this: "Don't give the hens much soft food in the morning or they will 'lazy around' all day and get fat and never lay. If soft food is fed at all, feed just as much as the hens will clean up in ten minutes, and no more." The Petaluma people do just the opposite. They feed a soft food early in the morning and they give them enough of it to last them till noon. The hens eat far more soft food than whole grain, and yet they produce some eggs. Now there are some poultrymen who do not feed this way. Some feed dry food altogether, and some ring in different combinations, but in this article I am writing of

typical poultry farms, of the average poultry farms and the average poultry farmer of Petaluma reads all that is said about feeding hens and then does the opposite. He feeds soft mash heavily. Mr. Hyatt, one of the successful poultrymen, who has been in the business for some ten or twelve years, said that he fed about 3½ pails of soft food to one of whole grain. The method is to let the fowls eat as much soft food as they want during the forenoon and as much whole wheat as they want in the afternoon.

While that method is pretty generally practiced, there is less agreement as to what shall constitute the mash. Wheat, of course, is the base of all rations, but I found no two poultrymen mixing up the same kind of mash. One man fed boiled wheat and horse meat mixed with shorts, another fed 5 sacks of meal—wheat, corn, etc., and one sack beef scraps, mixed with skim milk. Another feeds this way: 40 sacks wheat, 40 sacks corn, 40 sacks middlings, 40 sacks barley, 50 sacks bran, 7 sacks charcoal, mixed with milk and meat soup. He feeds 200 lbs. horse meat a day which is boiled and the soup and meat mixed with the meals. Another uses rolled barley, bran and shorts, ground corn and beef scraps, and sometimes uses horse meat instead of beef scrap. Another uses 2 parts good shorts, 1 part middlings, 1 part bran, 1 part fresh horse meat or cattle meat and in winter adds 1 part corn; sometimes a little pepper, always salt and charcoal; mixed with water.



A HOUSE FOR BROODY HENS. HENS ARE DROPPED IN THROUGH THE ROOF. HOUSE HAS SLAT FLOOR.

This mash is fed in long covered troughs. If there are cattle in the same field, the feeding ground is fenced in.

Early in the afternoon wheat is fed as much as they will eat before going to roost in the evening. This is usually thrown on the ground or fed in hoppers. On one large farm a self-feeding bin is opened about one o'clock and closed at night. On Mr. Roerdan's farm a boy of fourteen feeds wheat to 6,000 hens in about half an hour. He does it this way: At 1 o'clock he jumps on his grey pony and rides over the farm of 120 acres opening up the feed bins. I caught the boy with the camera as he was making the rounds. He jumped off the horse, opened the door, and jumped on again about as quick as I could snap the camera, and was off to the next colony on the lope. How long would it take a man to feed 6,000 hens, carrying pails of wheat, opening doors and gates, kicking the wheat under the litter, in a long continuous house? The other way of feeding of 6,000 hens is a pleasant diversion for a boy with a pony. Here is a little food for thought for those who insist on keeping the chickens close together on small acreage so as to economize the labor.

Incubation and Brooding

Petaluma's poultry industry is founded on artificial incubation and brooding. Its successes will be measured largely in proportion to the success of the incubator and brooder. In this part of the business developments have been following thick and fast the past few years. To keep up with the procession one must visit Petaluma about every year.

Hatching the Chicks

Four or five years ago each farmer, and when I speak of farmer I mean poultryman, for every farmer there is a poultryman, each farmer four or five years ago, hatched and raised his own chickens by using incubators, individual brooders ranging in size from 150 to 500 eggs. Now the hatching has become a specialized business. Men make a special business of hatching chickens; they do nothing else. There are probably a dozen hatcheries with capacities of 10,000 eggs up to 60,000 or more, and though I haven't the figures I have no doubt that those hatcheries during the past season, hatched considerably over a million chicks. These chicks are not all retained in Petaluma. Many of them go several hundred miles away as day-old chicks. Many of the poultry farmers buy their chicks from the hatcheries. Not all of them, however. Some of the most successful farmers were incubating their own chicks, but the business of the hatcheries has been growing rapidly the past two or three years and the past spring it was hard for the hatcheries to fill their orders.

The hatcher works on a basis that will give him a certain profit for his labor whether he furnishes the eggs or merely does the hatching of the eggs. Where the farmer takes his eggs to the hatchery the hatcher charges him from 3 to 4 cents for every chick delivered, the price depending some on the fertility of the eggs.

When the hatcher furnishes the eggs as well as the chicks, he charges from about 7 to 10 cents a chick, depending on the price of eggs at the time.

Brooding 1,500 Chicks in a Flock

The farmer takes the chicks from the incubator home and puts them in brooders already prepared for them, but during the past season large numbers of the chicks, instead of being taken home, were taken to another man to raise. Here is another special business that has sprung up, that of raising the chickens. This has been brought about by a new system of raising the chicks, and I want to prepare the poultry writers for another shock. Anyone who has read poultry papers at all has read something like this: "Don't put more than 50 or 75 chicks together in a brooder." This special business of raising the chickens has grown up around the possibility of keeping as many as 1,500 chickens together in a flock with a brooder stove to keep them warm.

I saw 1,500 chicks taken out of incubators, put in boxes holding 100 each, but divided into partitions holding 25 each; helped an old man of 72 years old load them on a wagon; rode with him through the streets and two miles out in the country; helped him put them in a little cheap house 20x20 ft. The brooder stove had been lighted an hour before and the house was warm with a brooder temperature. The stove was in the center of the room and has an oil burner, the fuel being engine distillate, fed from a 10-gallon tank attached to the outside of the house. The chicks were soon scampering around the room, keeping a certain distance from the stove, however. A fence made of 1-inch poultry netting 12 inches high, with burlap sewed on both sides of it, was put in a

circle around the stove and about six feet from it. The purpose of this fence was to keep the chicks from getting back into the corners before they learned where the heat was. About the second day this fence is taken away and the chicks given the whole room to run in.

The gentleman, 72 years of age, Mr. Carpenter by name was raising 5,000 chicks at one time in this way, and making his living by it. At three months of age the pullets went to the farmer who furnished the eggs to the hatchery. This is the second year Mr. Carpenter had been doing this and when I saw him he was well pleased with the result. Another gentleman, without help, was raising 8,000 in this way. Others were following the same special business. Quite a number of the farmers were using the same brooder system.

The special advantage of this system is the saving of labor it makes possible. One brooder of this kind will take care of as many chicks as 15 or 20 ordinary individual brooders. The distillate costs 9 cents a gallon, and the stove will use from 6 to 9 gallons a day, depending on the weather. Some think 1,500 is crowding the brooder a little and do not put more than 1,200 in it. The stove is kept hot enough so the chicks will keep back two or three feet from it. At night they lie in a circle around the stove and the larger the circle the less crowding there is. If the fire goes down the circle contracts and there is too much crowding. During the day they run all over the floor, and they are a busy, spectacular lot. There is no prettier sight in chickendom. They have no lack of exercise. They get it running foot-races around the room. One problem is to feed them so as to prevent what a cowboy would call a stampede or what a football fan would call mass playing or bucking the line. If a bit of meat were thrown in the room there would be a scramble rivaling in intensity that of the football players in bucking the line for a touchdown.

Egg Farming in Greater New York

Profitable Results Obtained from Intensive Poultry Raising by the Principal of a Public School in the City of Brooklyn, New York.

Rudolph P. Ellis

THREE years' experience in poultry keeping does not entitle me to speak otherwise than as a novice; and I am induced to set forth what has been accomplished on our plant solely because I believe that an account of our methods will prove interesting—and I trust of some aid—to the many who, this year, will try their hand at poultry raising. It is also because I am firmly convinced that there are money and pleasure to be obtained from poultry, worked as a side line, and that there are very many who could add considerably to their income by employing their leisure in well-directed efforts at poultry raising.

My interest in poultry extends back many years. As a boy I used to figure out profits on paper; and contrary to the usual experience of those who try to realize on their "paper profits," I have exceeded even my boyish dreams. I will frankly admit, at the start, that I am an enthusiast about the hen—as a commercial proposition. Who would not be, if she showed a profit of $3.74 in one's novice year, and does better each succeeding season?

Where to Locate—Variety to Breed

It is necessary at the start to determine which line is to be followed—the fancy or the commercial. There is a great deal of pleasure and honor, and a good income for a number, to be obtained in the "fancy," but we chose the "commercial" end because we knew there were a number of well known commercial plants that were paying very well and the market for fresh eggs is practically unlimited. All that is said in this article, therefore, is said from the commercial standpoint.

Once your aim is settled, the first problem that confronts you is location. Where shall you start? Start where you are. Our beginning was on a plot sixty feet by fifty. Anybody, it seems to me, can secure that much ground. To the city man, especially, I would say: Do not make the mistake of rushing to the country to start the poultry business. Try it in a city suburb—where you can get a high price for your eggs, whether you have a dozen or a case to sell.

A great deal has been written about the merits of the various breeds. Personally, I do not care for the poultry (meat) end of the business—there is too much competition with the cold storage product. We adopted the egg end of the business as our main line, because of the high prices that can be obtained for a fresh egg in the city. If eggs are desired, few will dispute the claim that the Single Comb White Leghorn is the bird to choose. Her merits are briefly summed up as follows:

1—She is smaller and costs less to maintain and less to house.

2—She is active and stands confinement well.

3—When once raised she will stand rougher treatment than birds of the American type.

4—She does not need the care in feeding just the proper amount that a Plymouth Rock does to keep in condition.

5—She matures six to eight weeks earlier than any of the American class of fowl, which means she can be hatched just so much later in the spring—a mighty important advantage on an egg plant. To secure winter layers of the Rock class, one must hatch them in February and March, when fertility and weather conditions are not at their best. An April or May Leghorn will lay by November. All these things we discovered before starting, so we chose the Leghorn.

It has been well said that the strain counts for more than the breed. All Leghorns are not good layers. Prize winning strains at the great shows are not necessarily good egg layers. You can breed five points on a bird's comb. You can breed shape and color. You can also breed performance—the egg laying habit. Therefore select your stock from a proven strain of layers. It is mighty important to the commercial poultrymen whether a certain amount of time and labor and money will produce a hundred eggs per year from a hen or whether the same investment will produce one hundred fifty eggs. It is not claiming too much to say there is that difference in the performance of different strains under the same con-

ditions. At the start we purchased thoroughbred Leghorns of proven laying qualities. It is important to get thoroughbreds, as in no other way can you secure birds uniformly alike, and hence susceptible of uniform treatment. The trouble with the mongrel flock is that what suits one type of bird does not quite suit another.

How We Began

There are three ways of starting your flock. The first is to buy matured stock, and hatch the eggs they lay; the second is to buy the eggs they lay, and the third is to buy the chicks newly hatched—the so-called "day-old chicks." Despite all that can be said in favor of either of the first two methods, the fact remains that you are buying possibilities. But when you buy a chick, you have something to start with. So we bought thoroughbred White Leghorn chicks at approximately twelve cents each—buying during three months some two hundred fifteen in all, and we purchased two standard brooders. Our initial outlay did not exceed sixty dollars and we soon had the beginnings of a future "plant" on the fifty by sixty plot in the rear of our Brooklyn house.

Fig. 1.—Aurora Leghorn Farm's portable modified, Tolman Fresh Air House, "Style A," size 14x14. Note muslin screens. The house is raised off the ground, allowing free circulation of air, thus preventing dampness.

Fig. 2.—Interior of "Style A" ouse showing clear floor space, droppings board, method of bolting sections together and of fixing roof timbers. A, exterior and interior view of trapnest; B, exterior and interior view of trap sprung by hen on entering, C, trap unset and shoved out of the way.

It is a fatal error to start on too large a scale. It is also a fatal error to start with so few chickens that they are not a serious proposition worthy of your care and consideration. We aimed to have between sixty and eighty pullets the first winter. We raised seventy-two pullets out of the two hundred fifteen chicks purchased, and eighty-two cockerels—one hundred fifty-four in all, which is about seventy-two per cent of the entire number. A good many people do better than that; but we are glad if we can, on a larger scale, get one good pullet for each three chicks hatched. Many plants figure one out of four.

Chicks Artificially Hatched and Brooded

We did not do any incubating until the second season. We then ran off three hatches from a two hundred twenty-egg machine, getting 187, 176 and 155 chicks respectively. We have never set a hen, and never expect to. It is too small potatoes to bother with—commercially. When you can get a three hundred ninety egg machine, with twenty minutes care a day, to give you as high as three hundred sixteen fine healthy chicks, you do not care to bother with hens. Our incubator capacity for the coming season will be approximately five thousand eggs and we shall hatch all our Leghorns in April. This will insure their reaching maturity well before November.

On our plant we make it a point of having our chicks as nearly the same as possible. We have found that shifting chicks from brooder to colony houses entails loss and great trouble, so we have come to adopt the so-called colony brooder, in which the chicks can be raised to maturity. We place sixty chicks in a three feet by six, two-compartment colony brooder and cull out the cockerels as soon as we can distinguish them. These are fattened for broilers and disposed of as rapidly as possible. We find it does not pay to mature a Leghorn cockerel unless you wish to keep him as a breeder. When losses are taken into consideration, this will leave approximately twenty-five pullets in each colony brooder, which is an ideal number. They will thrive. Overcrowding is fatal to success. Only vigorous birds will prove to be winter layers.

Food for the Chicks—White Diarrhoea

We have not found that we can improve on the dry grain method of feeding brooder chicks. For the first three days we feed bread crumbs and hard boiled eggs, chopped fine. Thereafter, we use a good prepared chick food until the chicks are ten to twelve weeks old, when they are gradually weaned, and cracked corn and whole wheat in equal parts are substituted. Beef scrap is fed from the tenth day on. Charcoal and grit are kept constantly before them, and their water is supplied in sanitary fountains and renewed three times daily.

Much loss is sustained through the ravages of white diarrhoea. An effective preventive is to put a teaspoonful of five per cent carbolic acid (commercial solution) in ten quarts of water. Use this as drinking water from the start until chicks are ten to twelve weeks old, and you will have little trouble with diarrhoea.

Housing the Birds

When the chicks reach the age of three months, the brooder is converted into a colony house and they are given the freedom of the enclosure. All those that appear backward are disposed of as broilers, and only the vig-

orous specimens are kept. A weakling will never make a layer of sufficient worth to pay her board.

Right at the start we avoided two common errors. We did not build ramshackle houses in which no hen could well thrive, nor did we overcrowd. At the very least, three square feet of unencumbered floor space must be allowed per hen; and furthermore, this holds good only where the flock numbers fifty birds or over. For smaller flocks, four and even five square feet must be provided. This is a matter of vital importance, and one on which I have personally noticed most beginners go wrong. It follows, as a natural consequence, that the flock of fifty or even larger numbers, is the most economical to house. The old idea of the "long house," divided into numerous connecting small pens, has been abandoned on the most successful commercial plants. The birds are housed in separate houses, in flocks approximating fifty.

Starting on a city lot, and appreciating that we would have to move a number of times, before we were finally settled in a permanent location, we were put to it to make our houses portable. After much diligent search, we could find nothing portable of suitable construction. It was about this time that the "fresh air" houses were being much talked of, and satisfactory results were being obtained in all localities. The "fresh air" principle has probably done more for the success of the poultry plant using it than any other idea that has been advanced in the last decade.

The many articles that appeared in Reliable Poultry Journal describing the "Tolman Fresh Air House" decided us. Just before starting to build, however, Mr. H. Heidenhain's article outlining his modification of the Tolman house, appeared in the May, 1906, issue of the Reliable Poultry Journal. We set about planning this house on the portable scheme and erected our "House A," an interior and exterior view of which is presented herewith. The uprights are two by three spruce and are bolted firmly together. Each side is made in four sections, and the roof and floor are in twelve sections each, making forty sections in all. Except for the portable feature, the house is identical with Mr. Heidenhain's plan. We use upper and lower muslin screens in each door, which are closed at night or during storms. We find it of great advantage to have these screens outside instead of inside, as in this way the necessity of opening each house to close the screens, is obviated.

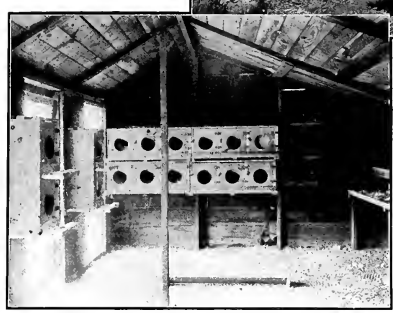


Fig. 4.—Interior of "Style B" house showing the clear floor space and the trapnests unset for midsummer use.

The accompanying photographs of our "House B" show how we modified an old time glass front house to the "fresh air" type, by taking out the two middle windows and substituting screen doors and muslin frames.

We also adopted Mr. Heidenhain's plan of keeping the hens in the house the entire winter. The floor was covered to a depth of six inches with sawdust of a coarse variety (planer shavings) in which the grain was scattered to enforce the needed exercise which is so essential to winter egg production. This 14 by 14 house wintered the seventy-two pullets, and our egg yield exceeded forty-five per cent the entire winter, with eggs selling from the door at fifty cents a dozen. We did not have a case of sickness in the house the entire winter.

The droppings board was cleaned, without fail, each morning. The floor space of the house being entirely clear, the birds were forced to roost during the day on the perches, thus keeping the sawdust clean. We ascribe much of our success to the scrupulous cleanliness of the houses and nests. Little as it may be supposed, hens like nice, clean, sunny quarters; and a happy and well-fed

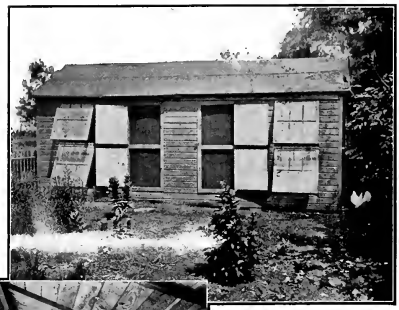


Fig. 3.—Aurora Leghorn Farm's "Style B" house, a modified, glass front house. Note the wire screen doors with muslin frames hooked back for summer use and the windows open.

pullet cannot fail to respond to such surroundings.

Value of Green Cut Bone

We are inclined, however, to ascribe much of our success in securing winter eggs to the feeding of green cut bone. We would not be without this food at any cost. Three pounds for each one hundred fowls, fed daily, will produce more eggs than any food with which we are acquainted. There is no comparison between green bone and beef scraps.

From the start we have endeavored so to conduct our plant that a system could be devised which is susceptible of application on a larger scale. We have tried not to get into the habit of giving the few houses of chickens which we have so much care that it would be impossible to carry the system out on a large scale. It is here that so many fail. We hear talk of the "five-hundred-hen man" and the "one-thousand-hen man," and of the "few two-thousand-hen men." Our hens received no more care or supervision than we could supply to same hens if ten or twenty times the number were kept.

Bearing in mind that we wished to secure a system

that was susceptible of being carried out on a large scale ultimately, we adopted the Maine Experiment Station system of feeding. This is to scatter in the litter each night after dark, four quarts of cracked corn per one hundred birds, and at ten A. M. to scatter four quarts of whole wheat in the litter. Supply fresh water each morning and feed the green bone one-half ounce to a hen. At noon feed green food—cabbages, which we obtain from the farmers about; otherwise, alfalfa. There is kept before the fowls all the time a dry mash consisting (by weight) of two parts bran, one part wheat middlings, one part corn meal, one-quarter part oil meal, one part beef scraps. This is fed in hoppers. Oyster shell, grit and charcoal are before the fowls always.

Hens kept as a side line on this system can be tended night and morning, if necessary, with equally good results. All grain could be scattered at night and the bone and green food fed when watering in the morning.

Fertility of the Eggs

It is generally conceded that it is not necessary to keep males with the pullets in order that a good egg yield may be obtained. We have found, however, that it is advisable to keep one or two males in a house with sixty females. Left to themselves the females are apt to pick at one another. Such a male is of course of no use later as a breeder, and we, therefore, use old cocks in the laying house.

One of the difficult problems that is ever before the poultryman is the question of fertility. I append a table showing the fertility of our eggs last season.

Aurora Leghorn Farm, Fertility of Hatching Eggs, 1908

Date Set	No. Eggs	Tested Out	Per Cent Fertile	No. Chicks Hatched
March 8	129	11	.92	78
March 15	121	8	.93	94
March 23	391	35	.91	291
April 3	220	22	.90	149
April 8	120	6	.95	91
April 17	391	43	.89	287
April 29	120	11	.90	83
May 9	390	36	.91	234
May 9	390	38	.90	235
May 13	390	36	.90	289
May 16	390	26	.93	316
May 27	120	11	.90	99
May 31	390	69	.82	143
May 31	390	72	.81	187
June 6	390	85	.78	230
June 13	390	96	.75	251
June 18	120	36	.70	74
June 28	390	150	.62	191
June 28	390	141	.63	179
July 4	390	111	.71	173
July 10	390	69	.82	272

The two machines set on May 9th were delayed in arriving and were set with eggs that had been saved for them, the oldest eggs being four weeks old. This resulted in relatively poor hatches. It will be noted that the machines filled immediately afterwards with eggs not over a week old, gave the best hatches of the season.

All our machines are of the same make—concededly one of the best manufactured. Yet we notice a marked difference in their performance for which we cannot account.

How We Get Fertile Eggs

It will be noticed from the table above that we had very excellent fertility up to the end of May—which marks the end of the setting season for the commercial farmer. We account for this as follows:

Our males are kept separated from the females from October until February. They are made to "rough it," being allowed out in all kinds of weather; whereas the hens are kept confined in the fresh air houses all winter—from Thanksgiving to St. Patrick's Day. When we mate up, we put in one cockerel to twenty females. This is done about two weeks before the fowls are let out. When they are allowed out, the flocks have free range. We then introduce enough additional males to make the proportion one to fifteen, and we find by this method that all the hens receive attention, as the cockerels introduced last, acquire a following of their own. In this way a more natural selection is affected. The birds will mate themselves better than we can do it for them. All specimens being of the type we desire, we do not seek "special matings."

We keep our hens two years, and we find that they lay as pullets much better than as hens. If it were not that we need the hens as breeders, we would keep only pullets. We have not tried the enforced molt on the Van Dresser system of withholding food for two or three weeks and putting the hens on a grass run, some time in July or August. We object to doing this, as we consider it unnatural to force the molt, and feel that it is bound to hurt the vitality of the hen, which we wish to use as a breeder. We are probably wrong, but "stick close to nature" is our motto, and we are satisfied with our results.

What We Have Accomplished

And now as to results. Ours is an egg farm. We cater to the largest market in the New World. It has been said that if all the vacant land within fifty miles of New York City were to be occupied by poultry farms, they could not begin to supply the eggs used within the city. Furthermore, western and market eggs generally are so stale when they reach the consumer in this city, that there is an unlimited demand for really fresh eggs (not over three days old) at prices ranging from forty cents to sixty cents per dozen. To substantiate this statement I will say that we accept the entire shipments of a number of men who buy and raise our day-old chicks, and put these eggs out to our private trade. We can do this fairly, as the chickens are really the same as our own and their eggs are consequently quite uniform with ours. We guarantee these men that they will receive fifteen cents above the average market price on the New York Produce Exchange. This is net to them.

Our egg yield in our novice year was 144.4 eggs per hen. In our second year it was 162.4, and this year it bids fair to exceed that mark. Of course we started small. The first year we had one house full—the portable "Style A" illustrated herein. At the end of the year, we took down our portable house and moved to the two-acre, old homestead at East 49th street on the old Mill Lane—quite an historic road in Brooklyn in Revolutionary times. That winter we had two hundred forty layers and this winter we have three hundred and twenty layers. For the winter of 1909 we are planning to have at least six hundred layers.

The increase in our average egg yield is due to trapnesting all layers and selecting therefrom those that produce over one hundred sixty eggs per year. Only vigorous, well-sized birds, in excellent condition are taken. We

breed hens in their second season with early hatched cockerels that have been kept separated. The fertility we get has been shown above.

The first year we netted $3.74 per hen. This was after allowing an expense of $1.42 per bird. There was no labor expense that year, and our price ranged from 35c to 50c per dozen. The second year our expense per bird was $1.79, including the hire of a boy for a few hours daily; but as our prices ranged from 40c to 60c per dozen, we had gross receipts of $5.96 per hen, which left $4.17 net profit for our own labor and investment.

In these figures are not included any profit made from the sale of "day-old" chicks. All eggs were charged up at the price at which they would have sold as table eggs. This year we shall set thirty thousand eggs, selling all chicks we do not need, at twelve cents each.

In figuring cost per bird we have charged the cost of maintaining the males against the hens. That is, we have divided all expenditures by the number of hens kept. Before doing this we subtracted the value of the males used as table poultry and those sold as breeders. We think this a fair enough way to keep the books. Running an egg farm, our unit is the layer; and if males have to be kept as a part of the breeding establishment, we deem it just to charge their expense against the hen in figuring her annual profit.

We also find that the cost of hatching and raising a layer is fully equaled by the receipts from the sale of her when we are through with her. This is more especially true when we consider the returns from the sale of the surplus cockerels as broilers. It costs us sixteen cents for feed to raise a thirty-seven and one-half cent broiler, leaving us over twenty cents to apply on the value of the eggs incubated, the oil, and the feed of the pullets for the first two months. We can always sell our two year old hens at more than a dollar apiece, and in the estimation of profit per hen we have not added the profit from this source, because we have not kept accurate records on these points. A more accurate method of bookkeeping would merely show a larger profit per hen, than that already credited.

Leghorn Broilers for the Hotel Trade

The Production of Squab Broilers a Most Profitable Branch of the Poultry Business. Best Methods of Killing, Picking, Packing and Shipping Broilers to New York Hotels. Forcing and Fattening Broilers.

J. Courtney Pounderford
Proprietor of Monmouth Poultry Farms, New Jersey

THE broiler end of the poultry business is a problem which is of deep interest to every breeder, especially the large producer. We usually figure 50 per cent cockerels from our entire season's output of young stock. Now, take the farms which aim to hatch 6,000 chicks, and mature 2,500 pullets for the fall trade and their own use. They will have anywhere from 2,500 to 2,700 cockerels to dispose of. Naturally, no one farm could sell the above number of matured males, nor one-half that number. So the question arises how to dispose of them in the most profitable way, and clear the farm of them as soon as possible.

Any well conducted farm will have special cockerel matings from which they expect to select their show birds for the coming season, also their breeders and selling stock. The average run of males from these matings will be of a much higher grade than from the general utility pen. These are the males we keep, and the large quantity of utility cockerels are left to be disposed of within 10 to 12 weeks from birth.

Disposing of the Utility Cockerels

The question then comes up, how to dispose of them, when to dispose of them, and the price to be obtained. There are two classes of broilers; squab broilers, weighing 14 ounces to one pound and the 1½ to 1¾ pound broilers. From my experience there is more money in the squab broilers as they can be ready for market in from seven to eight weeks and command within 20 cents of the 1½ to 1¾ broilers, which need from 10 to 11 weeks in which to be ready for the market.

When one has a large number of broilers to market he ought to make a contract where he can obtain the highest price, not be satisfied with the market quotation, which is extremely low, and will not pay for labor and feed. The high class New York hotels are the places to

This illustration shows the Office of Monmouth Poultry Farm, also a portion of the Buff Leghorn Breeding House. Pens are 10 by 14 and runs 75 feet long. Young apple trees are planted in the yards for shade, and are bearing for the first time this year. Muslin frames are used in winter time. This House is 150 feet long and contains 200 breeders all put up in special matings.

go. They are willing to pay for quality and are always looking for some reliable farm to deal with. It is hard, I admit, (pardon a slang expression) "to get next" to the steward, as this personage is usually hemmed in and guarded as closely as the president of the United States, and when a business card with the words "Dressed Poultry or Eggs" on it, is sent down, the usual reply is, "Mr. X. is very busy and cannot see you."

Dealing With Hotel Stewards

Nevertheless, perseverance has its reward and you at last enter his august presence. The first question which is hurled at your head is "why should I change my supply as I am very well satisfied?" If you have confidence in yourself and your output you at once begin to show him why your broilers are better than those of the other fellows. Then question of price arises. I would say here that most of the larger, strictly high-class hotels pay about the same for squab broilers, anywhere from $1.00 to $1.20 per pair and for broilers weighing 1½ to 1¾ lbs., $1.20 to $1.60 per pair. Being a convincing talker we will say that you are given a trial order of ten pairs. When received, and if the shipment lives up to your description, you have a standing order. A farm cannot be too careful with each shipment made. I remember a case when I almost lost the contract through the carelessness of my packer, by his putting in a pair of broilers which were most inferior to the rest and also had torn breasts. It took a good half hour on my part assuring the "power that be" that this would not occur again.

Specimens Must Be Uniform

What is most essential is that shipments must be uniform, they must be dry picked; they must not show a lot of dark pin feathers and when dressed should present a

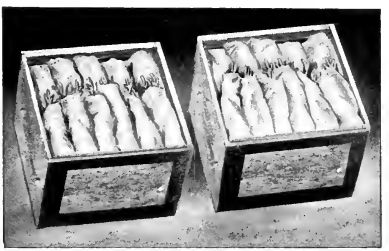
This illustration shows the pickers at work and the broilers being killed by the sticking process. The tub at the right is where the broiler is thrown as soon as picked. This is filled with cold water and takes out the animal heat. The crate on the left is filled with cockerels awaiting killing. Notice the box at the killer's feet which is filled with bran. The bird hangs over this and is allowed to drip after the sticking. After the shipment is made, the bran and blood are mixed up in a mash and fed back to the broilers which are coming on. This is greatly relished by them.

nice yellow skin, with well rounded breast and plump, meaty legs. The heads are always left on with the feathers half way down the neck. The feet and legs should always be well washed and the mouth, bill and face thoroughly cleansed and all signs of blood removed.

A great deal depends on your pickers. They should be extremely careful not to tear the breast or any section of the broilers, as the stewards are always particular on this point.

Best Method of Killing and Packing

The best method of killing, in fact the only right way, is by sticking or cutting the jugular with a long, sharp-pointed knife, then allowing the bird to bleed a bit and



The above illustration shows method of packing, each box contains 20 pairs of 2½-pound broilers, each wrapped in paraffine paper. The boxes have holes bored in all four sides and bottom for circulation of air, also for a drain for the melting ice. Another heavy sheet of paraffine paper is placed over the top broilers, then a thin layer of excelsior and the lid is nailed on.

plucking at once before the feathers become set. So skillful and quick is the expert picker, that I have seen a broiler nearly featherless, jump out of the picker's lap, showing that quite a little life remained.

Each broiler should be wrapped in paraffine paper, for some might drip a little blood from the mouth and unless thoroughly wrapped would soil the rest. Also this prevents the ice from coming next to the skin, and yet keeps the shipment in perfect condition. As each bird is finished it is thrown in a large tub of clean, cold water, in order to take out the animal heat. Before wrapping each broiler's head, mouth and feet are washed and any loose feathers plucked off, so as to present a nice, neat appearance.

Shipping Packages By Express

The packing box should have holes bored in the bottom, sides and top, to allow a circulation of air and the melting ice to run off. The box should also be perfectly clean with no odor, and as light as possible to reduce expressage to a minimum.

PERISHABLE, KEEP COOL, should be printed in large letters on each tag, so the Express Co. will not put your shipment under a pile of other goods. In all my experience of shipping broilers I have never had a shipment arrive in bad condition, simply through taking every precaution. And I would say that the shipper cannot be too careful, for it is always "up to him."

Removing the Down From Squab Broilers

A squab broiler will usually pick with quite a little down showing, and we obviate this by using an alcohol flame and holding the bird just far enough above this so it is not scorched and yet so all the down is taken off.

This is done before the squab is put in the tub, and it will then present a perfectly smooth, clean surface.

Forcing and Fattening Broilers

Some farms prepare their broilers by cooping them up a week or ten days before shipment and forcing them to the limit with fattening foods. This is no doubt a little quicker way to bring them along, but I know that many are forced off their feet by this method and simply go light. I have never used this method, but simply do not allow the cockerels which I intend for market the unlimited range I would the males I intend for breeders, and feed them more fattening foods, such as corn and a good fattening mash, also feed them three times instead of twice daily. I have had good success this way and never have a lot off their feet and going back. If broilers are forced to the limit they have to be marketed on the exact date when they are ready, for if they are not, from that date they will begin to lose. Shipping on a certain date is not always convenient, for the hotel might have a surplus on hand and wish you to delay a week. This makes it bad, for it is most hard to keep them right for a week longer, especially if they are what we call "ripe." By the method I use if we are asked to skip a week or even two, we have no fear of their "going back" and simply gradually cut their ration down a little which does not react on their system in any way. Of course, each farm has its own system of feeding and conditioning, and the one which gives the best results is the one to be followed. I have simply stated the one from which I derive the most good. Above all things do not feed a lot of cockerels, which if allowed to mature, will be sent to the commission house and be a losing game, but market them when they are broilers and do not be content with a nominal price, for the high prices are awaiting you if you will only go out and make the effort to obtain them.

How to Make White Leghorns Pay

The Story of a Successful Poultry Farm in Pennsylvania, From Which the Owners Cleared $1,900 Profit in One Year and Increased the Original Investment of Two Thousand Dollars to Over Seven Thousand Dollars in Six Years.

Le Roy Sands

IN WRITING this article, it is my intent to tell of the qualifications that I think one must possess to become a successful poultryman, and also describe the methods that enable us to make a net profit of nearly two thousand dollars from eleven hundred S. C. White Leghorns, during the past year.

In the first place, one of the first essentials for success in poultry breeding is an inborn liking for the business. It is plainly evident to succeed in any line that we must possess a strong liking for the lines we are to follow, otherwise we will fail to put forth our best energies, and as success is measured in proportion to the efforts that we put into our business, unless it be our best effort, we can not expect our full measure of success.

Poultry raising in any of its branches if followed for financial ends, becomes similar to a manufacturing business and the same as the manufacturer of machinery, shoes, etc., requires the same application of business methods in order to succeed. In other words, you must keep books with your hens, charging every item of labor, food, etc., and giving credit for all returns. With such business methods mix a liberal amount of common sense and the balance is easy.

About six years ago I decided to enter the poultry industry with the view of building up a business that would prove profitable from a financial standpoint. I interested a friend in the project and we secured a farm of twenty-two acres with a very desirable southern slope and good natural drainage. The farm secured we immediately erected buildings and began operations. By constant watchfulness and close attention to details, our first efforts were flatteringly successful, and we planned to increase the plant. Each season we have made additions to our buildings or equipment, doing this out of the profits of this business. Beyond our original investment we have never invested a dollar in the plant except that derived in profits from the business. Starting with one building, we now have four large laying and breeding houses, an incubator cellar, equipped with a mammoth incubator; besides several individual machines, a brooder house with a hot water brooding system of twenty hovers and several colony houses and brooders equipped with adaptable hovers. In addition to this we have made extensive improvements upon the farm in the way of clearing up rough fields and putting them under cultivation in order to secure better range for our birds. We also drove a ninety foot well and erected a wind mill with a storage reservoir of large capacity. The water from this is piped to all buildings on the farm, giving us a convenient and never failing water supply. All of this and many other small details have been accomplished in a period of six years. Starting with an original investment of approximately two thousand dollars, we now have a plant worth at a very conservative estimate, seven thousand and five hundred dollars, above all of this we have a neat bank balance to the credit of our hens. This has been accomplished by applying strict business methods, that is, by keeping books with our hens, charging every dollar invested up to them and placing to their credit every dollar received from sales. Not only have we increased the original value of our plant over three-fold, but we have a balance to the credit of the business that more than off-sets the original investment. So much for the financial side of the business and the methods to which I attribute our success.

Houses

I will now say a few words in regard to houses; these are all of the curtain front type, the design varying to suit our own ideas. One of these may be seen by referring to the illustration on page 132. They are all constructed with three tight sides with front composed of windows and muslin curtains. The curtain is placed high enough above the floor so that the cold draughts can not strike the birds when confined to the house. The window is added to give additional light to the interior on days that the weather is such that the curtains can not be opened. The houses vary in width from twelve to twenty feet and in length from forty feet to one hundred and ten

feet. Concrete floors are laid in each, making them practically rat proof and also easy to clean.

Proper housing is one essential to success, but the most important is good stock. This should be of the best, as more depends upon this one point than any other part of the business. In starting, we secured the most vigorous birds obtainable and by careful breeding, good food and strict attention to cleanliness, as well as numerous other little details that only come by experience, we have kept them so.

Our plant was started principally for commercial purposes, the breeding of birds that would produce a profit, a profit on the product sold at regular market prices. But as our operations extended and as our success has become known, a demand has been created for breeding stock, eggs for hatching and baby chicks and this promises to develop into a profitable branch of the business, and we expect in the future by catering to the demands of this trade to greatly increase our profits over those shown in the past. The value of standard-bred poultry is fast becoming recognized and the breeder who makes a specialty of producing healthy, vigorous stock with utility qualities well developed, yet keeping well within bounds of standard requirements, is bound to have ready demand for stock, eggs for hatching, or day-old chicks. We look upon the latter as a very promising branch of the industry and the demand for baby chicks is already greater than we are able to supply with present equipment.

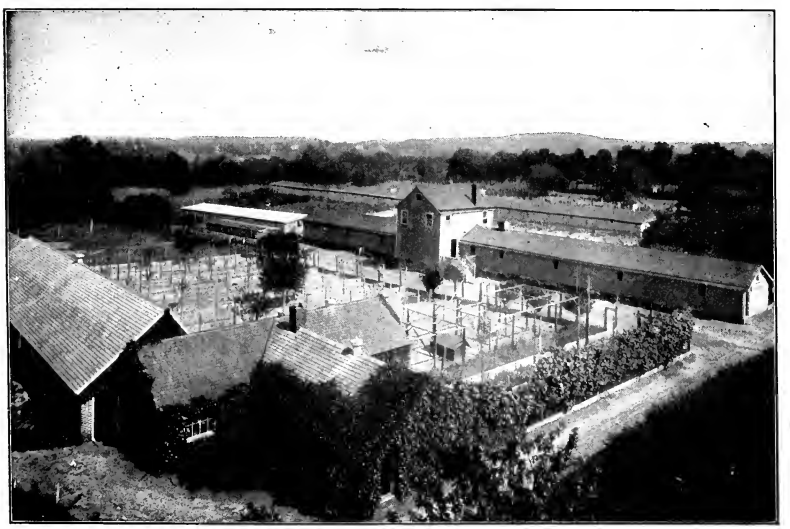
Marketing the Product.

First comes the production of the product, then the marketing. Here it is just as essential that the little details be not overlooked as in any other part of the business. It behooves us to secure the best market at the best prices for our product. We ship mostly to the high-class retail stores in New York City, where we receive a premium over market quotations. To be sure, at some seasons it is necessary that we turn a few cases of eggs in to the commission man. His fee for handling these is 5 per cent. This makes a slight difference in the price, but the surplus has to be marketed. The prices range from 25c per dozen in the season of plenty to 60c per dozen when fresh laid eggs are scarce. To secure the highest quotations, they must be strictly fresh, carefully graded and clean. We use the ordinary thirty-dozen-egg case and shipment is made by express.

Capacity of Plant

The housing capacity of our plant at the present time is twelve hundred hens. This is the number placed into winter quarters, usually this is reduced somewhat during late winter and early spring by selling breeders. The birds are put into the winter quarters about October first. Those not used for breeders are fed for egg production and are kept as long as they prove profitable. As soon as they stop laying they are marketed, as it is important to dispose of non-producers as quickly as possible. We plan to have our stock consist of 60 per cent pullets and 40 per cent hens, and have been successful in keeping to about this average.

The production of eggs has averaged approximately one hundred thirty-two eggs per hen for the entire flock. Some selected birds do considerably better, but considering the size of the flock we are very well satisfied with the



MONMOUTH POULTRY FARM, FRENEAU, N. J.

A bird's-eye view of this noted Leghorn Farm, which gives a fair idea of the number of houses and yards, though there are buildings on the left which do not appear in the picture.

showing. The average price received for these during the past year was 31½ cents per dozen. The sales from the plant the past year reached a total of $4,400 at market prices. The expenses, including feed, labor, upkeep of plant, etc., were a little under $2,500, leaving a net profit of over $1,900 for the season's work.

As both my associate and myself are engaged in other lines and devote only a small portion of our time to actual work on the plant, it seems to me as if this were doing fairly well. This figure can be increased by increasing the stock, which can be done with only the extra cost of feed and no increase in the cost of labor.

The laying stock are housed on the unit system, each flock containing from 100 to 400 head. These are provided with generous range during the open season, in fact the range is of such size that it is never bare. The breeding stock are kept in flocks of 20 females to one male.

In the group of illustrations above is given several views of the Sands & Bellman poultry farm, Hawley, Pa. In the lower picture a general view of the main buildings is to be had, on the right is the brooder house and incubator cellar, while on the left is shown one of the laying houses. This house is 110x15 feet, contains five pens in which a total of 405 birds were kept during the last year. The average egg production was 148 eggs per capita from the birds confined in this house.

These are changed frequently, thus insuring high fertility.

The dry mash system of feeding is followed and a mash composed of equal parts bran, corn meal, middlings and crushed oats with 10 per cent to 15 per cent of beef scraps added is used, and is kept before the birds at all times. During the winter about one-fifth alfalfa is added to the above. A feeding of grain is given in the morning and afternoon. This is usually composed of 35 per cent wheat, 30 per cent corn, 10 per cent barley, 5 per cent buckwheat and 20 per cent oats. This is varied some according to season and prices. These rations have given us the best results and I think them the best suited for our conditions and locality. In addition to these plentiful supply of shells, grit and charcoal is always provided, with a constant supply of fresh water. Many claim that liberal feeding of yellow corn produces a creamy cast to the plumage. I have used both kinds and from my experience would say that I can see no ill effects from its use.

Hatching and Rearing

Both the small incubators and a Candee Mammoth Incubator are used for hatching purposes, a large capacity being required, owing to the rapidly growing demand for baby chicks, this branch of the industry having added materially to our profits during the past season.

To get good strong chicks it is necessary that the breeding stock be strong, vigorous and well matured. This not only has a material bearing on the hatching of the chicks, but on the raising as well. All know, who have had experience, that it is one thing to hatch a chick, but quite another to raise it. The average hatch at our plant is about 65 per cent of the eggs incubated and we rear an average of 85 per cent of the chicks hatched. This I consider very good and I think it bespeaks well for our general conditions.

When the chicks are first hatched they are placed under the hovers of a continuous hot water brooding system, and are kept here until about four weeks of age, when they are transferred to colony houses, which are equipped with adaptable hovers. Here they are allowed to range when weather conditions will permit, and this system gives the best results of any tried thus far. The chick is given plenty of heat during the critical period and receives careful attention from the attendant. After removal to the colony houses, the close attention is not required as the chick, if it be a good one, is then well on its way as a later profit producer.

As soon as the cockerels begin to become troublesome, they are removed to runs by themselves and are marketed as broilers when the weight of three pounds per pair is reached.

Practically Free Range is Given All Stock

The range is cultivated and seeded to oats, clovers and grass seeds in the early spring. The clover and grass get a nice start and make fine pasture for the birds during the fall until the ground is frozen up. About one acre of range is allowed to every one hundred birds. This may be alternated so while one is growing a new crop of green food, the other may be used. With this system the range is kept sweet and the evil of contamination that is ever present in the small yards is entirely disposed of.

In conclusion, I wish to say that I think anyone possessing a liking for the poultry business can duplicate our success, providing they go slow and only increase the business as the earnings from the plant warrant. That is, do not invest every cent of profit received, but keep a small balance for a working capital. It is those who rush blindly into business that make failure of it. outline

your plan at the start and adhere closely to it. When we started in the business we decided that only such improvements or additions should be made as were justified by the earnings of the plant.

We have proven to our own satisfaction that S. C. White Leghorns may be kept at a nice profit. That it is necessary to make haste slowly in the poultry business if success is to be your goal. That a fondness for the business and some experience is necessary if you are to be successful.

That strict business methods are essential in this as well as any other business if you are to succeed.

That common sense is one of the main essentials and that strict attention to the little details is an absolute necessity.

Typical California Leghorn Farms

Winter Climate Ideal for Intensive Poultry Culture. Style of Low Cost Houses Used by Successful Egg Farmers Illustrated.

James Dryden

Professor Poultry Husbandry, Oregon Agricultural College and Experiment Station.

IN the neighborhood of Los Angeles, California, there are a number of poultry farms that offer favorable opportunity for studying intensive methods. It would be difficult to find a winter climate that was more ideal for intensive poultry culture than some sections of Southern California.

One of these farms or "chicken ranches," as they are called there, adjoins the city limits of Los Angeles, almost within a stone's throw of the Cawston Ostrich Farm. It is owned by Charles G. Weaver. It contains four acres and at the time of my visit about 1,200 hens were kept on it. It is located on rather a light sandy soil, not too light, however, for the growth of crops, as it was the plan to cultivate and grow something on the land every year, and at the time of my visit quite a number of the yards were covered with a good growth of oats, etc. Crops will grow here the year around. The yards were in sanitary condition, and there was no hard baked ground that the chickens couldn't get their toes into.

A Small Start

Mr. Weaver started in the chicken business here eight years ago with 35 chickens. He bought the four acres and made the first payment on borrowed money. The land is now worth some two thousand dollars an acre for building purposes. In 1909 he started the year with 500 hens, but sold them off during the summer to 325. His profit that year was $1,800 above cost of feed and hired help. The next year he started with 850 hens, thinned them out to about 600 before the next pullets started to lay, and he cleared $2,500 over feed and hired help. He begins about August to kill off the hens.

The total egg yield for 1909 was 86,519. The yield for the following year up to October first, was 90,870. The total receipts of the farm for the first year were $6,493.31; the last year, till October 1st, $5,235.48. The statement showed that the receipts for eggs and poultry and the receipt for breeding stock and eggs for hatching, were about equal. The flock was bred along utility lines, but he has some show birds and occasionally gets a good price for them.

The highest price received for market eggs was 55c, and the lowest 18 cents per dozen.

The best month in egg yield during the first year was March; the poorest November. The second year the April yield slightly exceeded that for March. While this agrees with conditions in the cold eastern states, I should expect were the figures obtainable, that there would be a higher percentage production here in the winter months than in the cold states, due to a more favorable winter climate.

The eggs were sold to retail dealers, though quite a number were sold for incubation purposes at $6 per hundred. He has secured as high as $25 for a breeding cockerel, though he makes no specialty of breeding fancy stuff.

Style of Houses Used

I want to call special attention to the style of houses used on this place. The houses show that Mr. Weaver has also learned the importance of fresh air in the egg business. The photographs herewith show his style of house. There were two houses of this kind on the place, each 200 feet by 12 feet. It is 4 feet high at back, 8 feet at center and 6 feet at front. The front is entirely open, as will be seen. The house is very cheaply constructed. Including the fencing for yards and water pipe, the cost was about $360. The rafters are of 2x3-inch stuff placed 2½ feet apart. On the top of the rafters two-inch wire netting is placed and this is covered with sanded roofing paper. The house is divided into ten sections, making each section 20 feet wide. For each section there is a yard 50 feet long. Sixty to seventy hens are kept in each section. There are three perches at back of house, made of 1x2½-inch material. Underneath the perches there is a platform to catch the droppings, but there is no floor. The house is set on a cement wall. There is a tight board partition between each section.

During the first visit I made to the place, which was about the end of February, 308 eggs were gathered in the house shown in illustration. A month later, on another visit, I helped Mr. and Mrs. Weaver gather 326 eggs from the same house, containing 600 pullets, and took the photograph of the buckets of eggs. From this house the eggs are all marketed. All the hatching eggs were secured in another house, in which yearling hens were kept. Mr. Weaver believes that the eggs from hens produce better chicks than those from pullets.

STYLE OF HOUSES USED ON CALIFORNIA POULTRY FARMS

Feeding and Housing Leghorns for Profit

Best Methods and Rations for Growing Chicks from Shell to Maturity, for Laying and Breeding Stock. Housing and Yards.

IN THE October and November, 1910, issues of American Poultry World a most valuable and interesting White Leghorn breeder's symposium appeared, in which many of the practical details of breeding White Leghorns for market were discussed by experienced breeders of White Leghorns.

Among these, the most important were those of feeds and the methods of feeding and housing.

The answers to this symposium were received from: H. F. Humphrey, New York; J. Courtney Punderford, Monmouth Poultry Farm, New Jersey; Huber Bros., Wisconsin; Sands & Beilman Poultry Farm, Pennsylvania; N. V. Fogg, Kentucky; F. W. Christie, Wayne Poultry Farm, New York; A. M. Pollard, Grandview Poultry Farm, Connecticut; H. F. Meister, Missouri; John H. Piper, Ohio; R. J. Elliott, Elliott Poultry Farm, Ohio; Geo. B. Ferris, Michigan; Harlo J. Fiske, New York; J. LeRoy Cunningham, Pennsylvania; Frank Neville, Michigan; S. B. and E. W. Twining, Pennsylvania; C. M. Walker, Virginia; F. S. Nicholson, New York; G. L. Wheeler, New York; W. R. Sperry, Christy Poultry Farm, New York; Turley & Scobee, Kentucky.

First—State in detail the best ration and methods for growing White Leghorn chicks from shell to maturity.

"Whole grain mixture morning and evening 400 lbs. wheat, 200 lbs. oats, 100 lbs. corn. Dry mash in hoppers, 100 lbs. middlings, 50 lbs. bran, 50 lbs. ground oats. Beef scrap in hoppers." Frank Neville.

"Morning of third day feed dry wheat bran, keep same always before them after the third day. When one week old feed good quality commercial chick food in litter with plenty of green stuff and a feed of fine ground fresh beef once or twice a week after the second week. Keep all water vessels clean with fresh water always before them after the first feed. After eight weeks feed same as laying stock." Huber Bros.

"When twenty-four to thirty-six hours old feed with johnny cake made with excelsior meal. Feed this for two days about six times a day, then alternate feedings with a good commercial chick food. Our method of preparing excelsior meal is 20 lbs. corn meal, 15 lbs. ground oats, 10 lbs. ground barley, 10 lbs. wheat bran. At five days keep dry mash before them all the time, excelsior meal with 5 per cent beef scrap added. Plenty of green stuff, grit and fresh water all the time. At six weeks we use larger grain ration and change mash mix. Grain mix at this time is 60 per cent wheat, 15 per cent cracked corn, 10 per cent hulled oats, 15 per cent kaffir corn. Mash mix is 35 per cent wheat middlings, 30 per cent wheat bran, 15 per cent ground oats, 20 per cent corn meal, add one-tenth of bulk of good beef scrap, also can add one-fourth bulk shredded alfalfa in case of shortage of green stuff. It is easy matter to sprout oats which are good for early chicks, later chicks should have grass runs. We prefer raising all chicks in brooders. Keep everything clean, disinfect occasionally." Sands & Beilman Poultry Farm.

"The first feed is grit, then I start in with a prepared chick food which I continue until they are about three weeks old, when I mix in some fine cracked corn and wheat. After they are old enough to leave the brooders I put them in colony houses and give them free range and feed them twice a day, whole wheat and cracked corn with some whole oats." H. F. Meister.

"Start with some good chick food and bran always before them. As soon as possible put them on cracked corn (fine) and cracked wheat. When on free range feed regular cracked corn and whole wheat and a balanced dry mash. Plenty of fresh water and clean colonies and entirely free range will produce the best of youngsters." J. C. Punderford.

"First ten days, (wheat bran, dry) fine ground wheat and corn, broken rice and a little millet. From ten days on, cracked corn and wheat, 2-3 corn, 1-3 wheat for grain; mash of 3 parts bran, 1 each of ground wheat and corn. Green bone three times a week." J. LeRoy Cunningham.

"Cracked oats at first. Bran and meal always before them after one week, commercial chick food taking place of oat meal. Then to wheat and cracked corn. Beef scrap fed occasionally. Pure water always. Free range if possible." C. M. Walker.

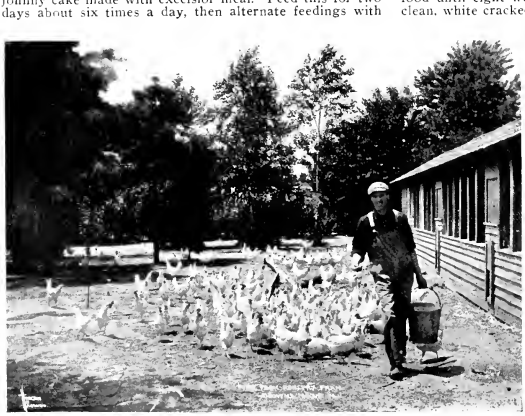
"Do not feed for forty-eight hours, then a good chick food until eight weeks old. After that equal parts good, clean, white cracked corn, white wheat, and oats until four months. After that plenty of beef scraps." Harlo J. Fiske.

"Commercial chick food first week, then wheat, hulled oats and a mash of equal parts bran, corn meal and middlings. Good grass range and plenty of clean, fresh water." S. B. & E. W. Twining.

"We feed a prepared food from the shell, with beef scraps, oyster shell and grit. Plenty of green food after they are ten days old." Turley & Scobee.

"Corn, oats and wheat in some form. Animal and vegetable foods. Both wet and dry mashes and Johnny cake. We have come to the conclusion that many people do not feed variety enough. We find that animal and vegetable foods are as essential for rapid growth as are the grains. The more they will eat of the proper kinds of food, the faster they will grow." W. R. Sperry.

"First, good vigorous breeding stock; second, well hatched chicks; third, a good chick food for first two months, a good dry floor with plenty of nice clean fine litter to scratch in, a careful feeder who will give enough, but will not overfeed and will keep them busy. A grass run is an advan-



Feeding Time at Pine Park Poultry Farm, Brown's Mills, New Jersey.

tage. After two months, a dry mash before them all of the time, grain feed twice a day. Later one of these grain feeds is dropped." F. S. Nicholson.

"After the chicks are hatched they should not be given anything to eat until they are forty-eight hours old. Then they should receive a drink of water and their first food. This should consist of a hard boiled egg and some dry bread crumbs, crushed very fine, slightly moistened with a little boiled milk. Continue with this feeding for two or three days, then begin feeding a little chick food. Feed the chick food four or five times a day, feeding only a small quantity at a time. Start weaning the chicks when they are two weeks old by adding to the chick food cracked wheat, cracked corn and hulled oats. Feed all grain in litter. When they are five weeks old start feeding a mash consisting of the following ground grains—equal parts wheat, bran, wheat middlings, ground oats and corn meal. This should be moistened with milk and fed very, very dry, the mash to be fed in the afternoon in small troughs. Keep clean water, fine charcoal, fine beef scraps and grit or sand before the chicks at all times. If the chicks are not on a grass run, give them plenty of green stuff, cabbage, lettuce, onion tops, rye blades or clover cut very fine make good substitutes. Give the chicks lots of room, never crowd them and keep their quarters absolutely clean. When the chicks are about eight to ten weeks old, put them in colony houses on free range." F. W. Christie.

"We use the hot air, indoor brooder system with indoor pen 5 ft. x 10 ft. and outdoor yard 5 ft. x 50 ft. for each brooder section of 75 chicks. As soon as weather permits chicks are placed in colony houses 6 ft. x 10 ft. with free orchard range. Our first feed is charcoal for a bowel regulator, after which we feed a high grade mixed chick food, an abundance of green food, keeping fresh water, charcoal and grit before them continuously. As chicks mature, we change chick food to cracked corn and wheat, feeding a limited amount of green bone and beef scrap. With a small gasoline engine we grind our own food and have thus cheapened the ration." R. J. Elliott.

"Feed nothing for forty-eight hours after hatching, then scatter in litter small amount of commercial chick food, gradually increasing the amount till the chicks have all they will eat up clean five times a day for two weeks, then three times a day, keeping before them all the time a clean dish filled with prepared growing food. At six weeks of age the chicks may be weaned from the chick food, and fed intermediate chick food; at eight weeks old the prepared scratch food may be substituted for the intermediate. When pullets begin to show signs of getting ready to lay, add prepared dry mash to their ration and continue with the scratch food and dry mash. By following this system you will produce wonderful layers, and your birds will be in the best possible condition." A. M. Pollard.

"I use chick food for the first six weeks, also keep beef scrap, grit and charcoal before them after they are six days old. I scatter a little grit and charcoal on the floor in the brooder from the first until they learn to eat it from boxes. From six to ten weeks old I feed equal parts cracked corn and wheat and from ten weeks old to maturity I feed 10 parts wheat, 8 parts cracked corn and 3 parts oats. Green bone is used for meat food after they are four months old instead of beef scrap. We raise all our young birds on free range in colony houses 8 ft. x 10 ft. Only feed twice per day after they get out on free range and give most of the food at night." N. V. Fogg.

"Our chicks always have free range after they are two or three weeks old and have usually been kept in colony houses most of the time until this age, and fed on bread crumbs, hard boiled eggs, and commercial chick food two or three times a week. Then we give wheat screenings fed in alfalfa cut fine. After they are put out on range, we use feeders with wheat principally for grain food and they always grow healthy strong birds." G. L. Wheeler.

"The ration I feed my Leghorns when first hatched is sand the first twenty-four hours and the yolks of hard boiled eggs up to forty-eight hours. Then give them oat meal and bread crumbs, later barley and ground wheat or cracked wheat for four weeks, when they will be able to eat whole wheat which is my standby, together with young clover, sprouted oats and alfalfa and bran dampened with milk." John H. Piper.

"First two weeks chick food and Spratts, with beef scraps and green food always before them. Cracked corn, wheat, buckwheat and oats should be added to ration after two weeks." Geo. B. Ferris.

"I get the best results by feeding Spratts chick meal from shell to maturity, mixed with equal parts of sifted ground oats and wheat bran, also feed whole corn, wheat and oats, with all the side dishes, including meat scraps, charcoal, grit and green stuff." H. E. Humphrey.

Second—State in detail best ration, care and management for White Leghorn laying and breeding stock.

"Too long an answer to tell properly here. Base of our feed is wheat, cracked corn, buckwheat, hulled oats with bran, corn meal and middlings and beef scrap in mash. Lots of cut clover hay or alfalfa." S. B. & E. W. Twining.

"Ration:—Morning, very light feed of grain (2 parts cracked corn, 1 part wheat, 1 part oats) scattered in deep litter. Dry mash before them after 2 P. M. only. Night feed, same grains in same proportions as morning feed, fed liberally. Oyster shell, beef scraps, charcoal, grit and good pure water before them all the time; also cut clover in hoppers before them at all times in winter, also for fowls not on free range in summer. Care, deep litter provided once a month, drop boards cleaned every day without fail, nest material changed every two weeks, oil roosts every two weeks, sprinkle lice powder in nests when nest material is changed." A. M. Pollard.

"For breeding stock I use 10 parts wheat, 7 parts cracked corn and 3 parts oats. This food is fed in litter morning and night and green food and bone at noon. For layers, we use the grain mentioned above in litter morning and night. Feed green food at 11 A. M. and a mash at 2 P. M. containing the following: 10 parts wheat bran, 5 parts ground oats, 1 part wheat middlings, 3 parts corn meal and about 17 parts green bone." N. V. Fogg.

"During the winter months our feed consists of a warm morning mash of equal parts of ground oats, corn and wheat bran, a noon feed in litter of a mixed feed of oats, wheat, buckwheat and sunflower seed, and a night feed of chopped corn. As the weather warms, the warm mash is done away with and oats and wheat fed in place of the corn. We feed plenty of cabbage, rutabagas, etc., and feed ground green bone three times a week." R. J. Elliott.

"Spratts food mixed with equal parts of ground oats and wheat bran every other day. I think wheat the best egg producing grain, with a little corn and oats. Pure water three times a day and always cleanliness, which is 'next to Godliness.'" H. E. Humphrey.

"Morning feed: Corn, wheat, buckwheat. Afternoon: Spratts food mixed with bran and cornmeal with beef scraps. Oats constantly before them. Feed liberally, but make them take plenty of exercise." Geo. B. Ferris.

"As our breeders have free range, we have to provide only grain, which is principally wheat, and surely this is nature's conditioner for healthy stock." G. L. Wheeler.

"Ration, winter: Whole grains, wheat, cracked corn (2 parts), white oats, barley and buckwheat. Ground grains for making mash: wheat bran, wheat middlings, corn meal, ground oats and linseed meal, (old process). Green food: cabbage, mangels, alfalfa, clover. Animal food: beef scrap and ground bone. Keep the scratching sheds littered with clean rye or oat straw 6 inches deep.

"The first thing the birds should receive in the morning after they come off the roost, is a drink of warm water, this to be followed up immediately with a feeding of hard grain, two handfuls for each bird, or if you choose, the hard grains may be fed in the evening after the fowls go to roost. At 10 A. M. give each pen a head of cabbage or two or three mangels; split the mangels in two. At 11 A. M. give the birds another drink of clean, warm water. At 2:30 P. M. start feeding the mash, to every four quarts of mash used, steam one quart of alfalfa or clover, and add to the mash. Mix very dry and serve warm. Keep in hoppers before the birds at all times, beef scraps, oyster shell and grit. Feed ground bone twice a week if you can procure it at a reasonable figure.

Remove droppings every day and renew the litter every two or three weeks.

"Ration, summer, from May 1st to October 1st: Omit the buckwheat in the hard grains and use only one part corn. In the mash food omit the linseed meal and alfalfa or clover and mix same with cool water or skimmed milk, feed very dry. In place of straw in the scratching sheds use sand. Feed all hard grains in the yards, that is to say, scatter the grain around the yard. For green food use fresh cut clover and sprouted oats. Beef scraps, charcoal and oyster shell and grit before the birds all the time. Give the birds cool drinking water twice a day. Plow up the yards every fall, and sow to rye and clover. Don't allow any birds in the yards until the rye is five inches tall." F. W. Christie.

"Our method is a dry mash always before them. During the cold weather they have a warm mash about 10 o'clock, a light feed of grain about 1 o'clock, and a heavy feed of grain at night, enough so there will be some left in the litter for morning. The mash used is somewhat similar to that used by the Maine Experiment Station; consider oats and corn two best grains." F. S. Nicholson.

"We find that with a slight variation the best ration for laying and breeding stock is the same as for chicks." W. R. Sperry.

"White Leghorns are the easiest chicks in the world to raise, they are born hustlers and require very little attention. We feed in hoppers during the summer and in litter after they go into their laying quarters." Turley & Scobee.

"I use wheat, corn and oats wholly, with plenty of beef scrap and green food." Harlo J. Fiske.

"Dry Mash before them all the time. 100 lbs. bran, 100 lbs. meal, 50 lbs. middlings. Beef scrap fed by itself. Wheat in litter in morning, cracked corn in litter at night. If penned, green food must be supplied. Pure water. Droppings removed regularly." C. M. Walker.

"Mash composed of bran, ground corn, white middlings, ground oats, equal parts, fed in morning, ½ the bulk steamed alfalfa or clover. In summer clover or alfalfa is green. Other two feeds use corn, wheat, buckwheat, barley and oats. 10 to 12 pounds beets to each 100 hens. Green bone three times a week, omitting grain food when we feed bone." J. LeRoy Cunningham.

"My laying stock I feed a mash in the morning composed of oat bran middlings, a small quantity of beef scrap. I feed just enough so they will eat it up clean in about a half hour. At noon I feed a light feed of whole wheat, which I throw in deep litter. Late in afternoon I give another feed of grain, about 1 part whole wheat, 2 parts of cracked corn." H. F. Meister.

"Give them good clean, dry quarters, plenty of fresh water and all the fresh green stuff you can in case fowls are yarded. Dry mash before them, mixed as follows: 35 per cent wheat middlings, 30 per cent wheat bran, 35 per cent cornmeal, add 1-10 bulk of beef scrap, 1-4 bulk alfalfa shredded. Shells and grit before them. Charcoal also is a good thing. We occasionally mix some fine charcoal in the mash. Grain morning and night of following mixture: Wheat 50 per cent, cracked corn 25 per cent, oats 15 per cent, buckwheat 10 per cent. Feed in good litter."

"Hatch all breeding males with hens; be sure all breeders are first-class in every way. Give your breeders the best of everything you have to give, free range if possible; fine results can also be had with yarded fowls if proper care is given them." Sands & Beilman Poultry Farm.

FIRST PRIZE S.C.W. LEGHORN COCK'L. GRAND CENTRAL PALACE NEW YORK 1911. MOORE BROS. MOSCOW N.Y. BREEDER & EXHIBITOR

A graceful and stylish young male, with fine comb and head points, well furnished tail carried at the proper angle, and excellent body lines. One of stars of the White Leghorn classes exhibited in 1911.

"For layers, morning feed, different whole grains alternated each morning. Green food at noon and a mash at night, slightly moistened with skimmed milk (heated). Plenty of fresh water, oyster shell and grit. Mash made of different ground grains and beef scrap. For breeding stock, same as above, except dry mash instead of moistened." J. C. Punderford.

"Grain in litter in morning, evening 100 lbs. of wheat, 25 lbs. of corn; hopper feed oats, bran and beef scrap; at noon, finely cut clover steamed, mixed with middlings." Frank Neville.

"From 15 to 25 birds in one pen, allowing 3 ft. per bird, 4 is better, with good ventilation, no drafts. Morning feed, good commercial scratch food; noon, green food, such as cabbage, mangels, etc.; night feed, 2-3 oats, 1-3 wheat, keeping good grade commercial breakfast mash always before them in dry food hoppers. We have found the above the cheapest and it produces eggs when eggs are highest." Huber Bros.

Third — What kind of houses do you recommend for White Leghorns and how much space per bird?

"Open air houses to hold about 15 to each pen, pen to be 12x16 ft." Harlo J. Fiske.

"Open front, 6 square feet." Turley & Scobee.

"Fresh-air houses and about 5 square feet of floor space per bird." W. R. Sperry.

"Shed roof house, 5 ft. in back, 9 ft. in front, 16 ft. wide, with about half of the south front open. 4 square feet." C. M. Walker.

"Have various kinds. Our best laying flock last winter had house room of 10x12 ft. for 40 birds, house had opening in front 15 in. high and about two thirds the length of the house. This was closed only on a very few occasions when the wind blew a storm in, or it was extra cold. Next house built will be an open front." F. S. Nicholson.

"Large size Tolman house for breeding stock, 100 to 125 in each flock. For layers, partly open front with curtains." J. LeRoy Cunningham.

"Scratching shed house with a roosting room that can be closed. Not less than 5 sq. ft. floor space per bird." Geo. B. Ferris.

"Good warm houses with open fronts have proved satisfactory with me. Allow 5 sq. ft. per bird. H. E. Humphrey.

"Continuous houses for laying birds, 25x12 ft., divided into two compartments, one as a scratching shed, the other a roosting room. For breeding birds the houses should be 12 ft.x12 ft. All windows covered with muslin. Not less than 5 sq. ft." F. W. Christie.

"I have been using the ordinary shed roof house here in Missouri, but I expect to use the Wood's open-front house hereafter. I allow 4 sq. ft. of house room per bird." H. F. Meister.

"As our birds are kept mainly at the stock barns on different parts of the farm, do not feel competent to say just how much space a hen should have." G. L. Wheeler.

"Open-front houses. Our houses are 110 ft. long, divided into five pens 15 ft. x 20 ft. with feed room 10 ft. x 15 ft. Two windows in each pen and one curtain 3½x 10. Give the fowls about 4 sq. ft." Sands & Beilman Poultry Farm.

"Open-front houses and about 1 square foot per bird." J. C. Punderford.

"Houses 16 ft. x 100 ft. for 500 to a flock. Good ventilation but no open front." S. B. & E. W. Twining.

"Open-air type, allowing 5 sq. ft. per fowl." Frank Neville.

"We use both the continuous breeding and colony house, allowing plenty of fresh air, but use curtain front roosts in cold weather." R. J. Elliott.

"For layers, a house any length desired and from 16 ft. to 18 ft. deep, with partitions every 9 or 10 ft., will give good results. For layers I allow from 3 to 4 sq. ft. space per bird. I use houses 10 ft. x 12 ft. for 1 male and 12 females for breeders." N. V. Fogg.

"My houses are 14 ft. square for scratching room, 7 ft. x 12 ft. for roosting, with a 7 ft. x 7 ft. scratching room. This accommodates 15 females and 1 male bird." John H. Piper.

"Wooden structure with alternate glass and muslin windows, the muslin windows to be open by day and closed at night in severe weather." A. M. Pollard.

Fourth—What kind of yards and how much space per bird?

"Yards small, 50x75 ft. for 100 head." J. Leroy Cunningham.

"Yards 100 ft. long and as wide as pens inside. For laying stock free range if possible." J. C. Punderford.

"Two yards of one acre each used so as to keep sweet and have grass in one all the time. Grow corn in the other each summer, which produces a crop and gives shade in hot weather." S. B. & E. W. Twining.

"Yards are 27 ft. wide by 125 ft. long, with plenty of shade. Yards and house room are all the same size, with canvas fronts for ventilation, that is, from scratching room to roosting room, with top ventilation to scratching room." John H. Piper.

"All our breeders have big grassy yards, equal to free range. I do not think the size of yard used for layers has anything to do with their laying, just so it is kept pure." N. V. Fogg.

"Our breeding yards average 100 square feet to the bird, densely covered with mature plum trees; our laying birds have free orchard range." R. J. Elliott.

"All the room in yards you can give them, but not less in any numbers than 30 sq. ft. Double yards if possible." Sands & Beilman Poultry Farm.

"The larger the better—not less than 100 sq. ft. per bird. Runs back and front of houses are the best." F. W. Christie.

"We have never yarded our Leghorns." F. S. Nicholson.

"Long narrow yards, 80 sq. ft. yard room." C. M. Walker.

"Free range." A. M. Pollard.

"Yards enclosed with 5 ft. fence, allowing 300 sq. ft. per fowl." Frank Neville.

"We yard our birds as little as possible, preferring to give them all the range possible." W. R. Sperry.

"30 ft. x 100 ft. for each 100 birds if possible, much less just as satisfactory. Our fences are 8 ft. high." Huber Bros.

"Free range." Harlo J. Fiske.

"Our yards are 50 ft. x 100 ft. We allow about 15 to 20 sq. ft. per bird." Turley & Scobee.

"I usually have yards of one-eighth of an acre for 15 birds." H. F. Meister.

"Wire netting 6 ft. high and all the space you can give them." H. E. Humphrey.

"Large enough to supply them with grass during the summer." Geo. B. Ferris.

Feeding For Best Results

Correct Feeding of Leghorn Chicks from Shell to Market as Squab Broilers, or to Maturity as Layers and Breeders. What to Feed and How to Feed. Balanced Rations of Whole, Cracked and Ground Grains for Special Purposes.

By Grant M. Curtis

Editor's Note:—Feeding poultry for profit is a science based on a thorough knowledge of the conditions favorable for the most rapid growth of the chicken from the day it is hatched until it reaches the market or laying stage. These conditions are exemplified in the two vital factors in practical poultry raising, viz:—the foods and the feeding. The proper blending of the grains in the daily rations can only be accomplished by careful experimenting and this involves years of patient study and keen observation before results of real practical value are obtained. The most thorough and comprehensive feeding tests with whole grains, dry mashes and scratch foods, made up to the present time, are those conducted by Charles E. Adair on the Cyphers Company Poultry Farm, Buffalo, N. Y. The results obtained from the feeding of different rations to growing chickens and laying hens, as well as the grain formulas used by Mr. Adair are reprinted by permission in this chapter, in a somewhat condensed form, from the latest and most complete bulletin on "Poultry Foods and Feeding," written by Grant M. Curtis, President of the Cyphers Incubator Company.

CHICKS ought not be fed at all during the first thirty-six to forty-eight hours after they are hatched. This is true, whether they are hatched under a hen or in an incubator. If hatched by a hen, the instinct of the hen teaches her to remain on the nest until all the chicks are out of the shells and they have had time to become thoroughly dry. If your chicks are hatched in an incubator, leave them in the nursery space or drawer forty-eight to seventy-two hours, the temperature of the nursery to be held at about 98 degrees the first day and at 95 degrees the second day. By this means the chicks get used to the 95 degrees and when two days old will be 'hardened'" somewhat and ready for the brooder temperature. Meantime by a wise provision of Nature, all the food that each chick needs will be supplied to it from the yolk of the parent egg that in the latter stages of the development of the chick embryo is enclosed in the chick's body.

The newly hatched chicks should not be fed or watered in the incubator. When they are thirty-six to forty-eight hours old, place them in a brooder that has

been heated up at least twenty-four hours, thus making sure of its being dry and warm. Have the hover-covered space heated to 95 degrees before the chicks are put in, as shown by a trustworthy thermometer, the bulb of which is located just above the backs of the chicks. The chicks will raise the temperature three to five degrees when all are under the hover, but do not attempt to lower the heat on this account. Maintain the hover-space temperature at as near 95 degrees as you can the first week, gradually dropping to 90 degrees by the fourteenth day, and to 80 degrees by the twenty-first day. For the balance of the time the chicks are in the brooder, run the hover-space temperature at 75 degrees. These temperatures are for the hover-space when the chicks are outside. Always keep the hover-space sufficiently heated so that the chicks can warm up quickly.

The First Day

After the chicks have been in their new "home" an hour or two, snug and warm underneath the hover, coax them out and give them their first meal, consisting of one-third stale bread, one-third rolled oats (or oatmeal) and one-third hard-boiled eggs, using shells and all (infertile, mis-shapen, soft-shelled, thin-shelled eggs etc.) mixed with sweet milk if you have it to spare, otherwise with water. Mix crumbly, not sloppy, adding a little chick-size grit or sharp sand and feed all the chicks will eat at each meal. Boil the eggs fifteen or twenty minutes, so the yolks will be mealy. It is a good plan to sprinkle a small quantity of chick-size grit of clean, sharp sand on the nursery food after it is spread out for the chicks to eat. Feed five times during the day, about every two and a half hours from 7 A. M. to 5 P. M. in late winter and early spring. As the season advances and the days grow longer, it will pay to give the chicks their first feed at 6 or 6:30 A. M. Late in the season some poultrymen feed newly-hatched chicks six times a day while they are on nursery foods entirely, giving the first feed at 6 A. M. and the last one at 5 P. M. Feed all that the chicks will eat up clean in a period of fifteen to twenty minutes, seeing to it without fail, that the smaller and weaker ones get their fill. Hard-boiled eggs may be omitted from this nursery food, or pin-head oats can be substituted for the rolled oats or oatmeal, but our choice for best results is the formula as given. Stale bread can be obtained at any bakery, the usual price being one cent per pound. If you have it to spare, give your chicks sweet milk (whole or skimmed) to drink the first week, using drinking dishes that will keep it out of their eyes. If the milk gets into the corners of the chick's eyes it will ferment there and cause sores. Dishes should be kept clean and sweet smelling. In the absence of milk, use fresh, pure water, supplied in chick-size drinking founts, or shallow vessels arranged so that the chicks can not get wet and thereby become chilled. Dip the bills of a few chicks in the water and they will teach the others to drink. For use on Cyphers Company Poultry Farm we buy sweet skimmed milk at the rate of 15 cents per eight gallons. It would be cheap at 25 cents per eight gallon can as compared with water.

CAUTION:—In feeding chicks and ducklings for best results, make sure, first to last, that they do not get any musty grain or sour food to eat. This is a matter of vital importance. Musty grain (musty to your sense of smell) will at once cause bowel disorder, stunting the growth and resulting in heavy mortality. Sour food is even more harmful. It will cause diarrhoea in little chicks within forty-eight hours. Do not feed frozen vegetables to young chicks—nor to adult fowls. Clean all nursery food dishes after each meal—also scrape the feeding boards and dispose of the leavings beyond the reach of the chicks or ducklings. Many thousands of valuable chicks are lost every season by carelessness in feeding musty grain and by allowing little chicks to eat various wet mixtures that have started to ferment under the action of the sun's rays. Skim-milk curd, separated from the whey and pressed dry, is a valuable food for young chicks, after they reach two weeks old, but we advise our customers not to use sour milk for little chicks. Sour milk at best is a troublesome article to handle and it pays better to use all milk (whole or skimmed) while sweet. If a supply of milk should turn sour, convert it into curd, discard the whey and feed the curd sparingly by itself or mix it with ground-grain mash food composed of

30 lbs. Corn Meal
10 lbs. Red Dog Flour
5 lbs. Beef Scrap
5 lbs. Bran
10 lbs. Cut Clover or Alfalfa.

Do not feed first sweet milk and then sour milk, as this plan is almost sure to result in serious bowel disorders. Mash food of any kind that is fed moist (crumbly wet) to chicks should be given sparingly, or they will over-eat. This is equally true of home-made "chicken cake" and various moist or wet mixtures.

The Second Day

Feed the home-made nursery food as above recommended, and while the chicks are eating this food, sprinkle upon it a small amount of high-grade commercial chick food and also sprinkle a little of this food on the litter nearby that covers the brooder or runway floor, which will start the chicks picking at it and scratching for it. A good chick food can be prepared with the following ingredients:

30 lbs. Crushed or Clipped Wheat
20 lbs. Coarse Corn Meal
10 lbs. Hulled Oats
10 lbs. Pinhead Oat Meal
10 lbs. Crushed Kaffir Corn
5 lbs. Cracked Rice (Split Rice).

To this six-grain, well granulated, balanced-ration chick food, add about one per cent, (by measure), of chick-size grit, mixing thoroughly. Feed in this way five times daily, the same as on the first day, sprinkling a little of the chick food before the chicks on the nursery food at each meal and scattering a handful in the litter nearby. During these two days, after each feeding, push the chicks back under the hover and let them come out later on of their own accord, one or two at a time, in which case they will know enough, as a rule, to go back to the heat. If the chicks are being raised in a brooder house, be sure to place a six or eight-inch board on edge, about a foot away from the front of the hover, so that the chicks will be kept near the source of heat and, therefore, can find their way back to it. In the limited space of the brooding chamber of a separate or individual brooder, the use of a "chick guard" during the first two or three days should not be necessary, unless there are cold corners where the chicks are liable to huddle and remain away from the heat until they become chilled, in which case a six or eight-inch guard made of inch or half-inch mesh

poultry netting, located near the hover curtain, will confine them within safe limits. Brooder chicks have a bad habit of huddling and dozing in the sun's rays near the window and of moving along as the sun spot moves, until the spot disappears, then they are liable to remain where they are instead of going under the hover. This natural, but dangerous habit, must be guarded against until the little chicks learn to use their "foster mother." Each time you see them huddling in the sun spot during the early days of their brooder life, tuck them underneath the hover, where they can sleep in safety. During this time the chicks need heat, food, drink, rest and sleep—and the rest and sleep are almost as helpful as the other three factors. The first two or three days there is no better place for the chicks to spend their time "between meals" than under the hover, provided this space —their sleeping quarters—is well ventilated and free from drafts.

The Third Day

Give only two meals of the nursery food, supplying an increased amount of dry, granulated chick food, which now should be scattered broadcast over the litter and stirred into it. Do not neglect to clean the drinking dishes —especially if you are using milk. Pure, fresh water is essential to chick health and rapid growth. A safe rule is to rinse out the drinking dishes at each feeding and refill them with fresh, clean water. Keep a large vessel of water near at hand for this purpose. Many successful poultry raisers start their chicks on the finely-granulated chick food and do not give them any form of nursery food, but we use the nursery food on Cyphers Company Poultry Farm, as here recommended, and have found that it pays to go to the extra trouble. Another successful plan, if the caretaker does not wish to bother with the nursery food, is to use in its place stale bread crumbs (not musty), merely moistened with sweet milk. Feed the same as directed for the nursery food.

The Fourth Day

Discontinue the nursery food and use chick food exclusively, feeding it by the deep-litter, "scratch-to-live" method as hereinafter described, or as near to this labor-saving, health-promoting, money-making plan as you can come, depending on how you are brooding your chicks. Beginning on the fourth day, supply the chicks all the green food they will eat and continue to do so until they are ready to go on range or to be fattened as broilers, friers or roasting chickens. Start the green food sparingly, especially if it is new-grown and full of juice. Early in the season use finely-cut cured alfalfa or clover. Later on, as the chicks increase in size, coarser short-cut alfalfa or clover can be used, also sprouted oats, garden greens, short-cut lawn clippings, etc., though lawn clippings are liable to be tough and less satisfactory. Lawn grass should be cut to one-fourth inch lengths for small chicks, or it may pack in their crops. Lettuce grows bountifully in limited space and is unexcelled as green food for little chicks, but should be fed sparingly until the chicks get used to it. New clover, cut when the plants are 4 to 6 inches high, then chopped or put through a clover cutter, makes a fine green food for chicks of all ages. Tender beet tops are good. So are dwarf Essex rape, Swiss chard and kale, especially if fed when young and tender. These greens are excellent for older chicks and for adult fowls. Steam all alfalfa or clover by pouring boiling water on it, using as much water as the amount of alfalfa will take up or absorb. Cover the vessel and allow the alfalfa to cool, then feed on boards or in shallow dishes. To get young chicks to eat steamed alfalfa or clover, mix to a crumbly mass with some form of ground grain, such as wheat bran, middlings, ground oats, or the growing mash given to chicks on the first day. One part bran and one part middlings, or one part of each of the three ground grains, mixed with once or twice their total bulk of the steamed alfalfa will make an appetizing green food mash. Once or twice a day feed as much of this mixture as they will eat up clean before leaving it. Other green food should be cut up fine while the chicks are less than a week old; later on, they can pick it to pieces and will benefit by the exercise. Chicks are greedy for sprouted oats and no better green food is available early in the season. If your chicks at any stage of their growth, have not been getting green food, or if you change the kind of green food to something they like better, be sure to begin with a small quantity and feed sparingly for two or three days until they get used to it, otherwise scours and more serious bowel disorders will result.

Fifth and Sixth Days

Feed the same as on the fourth day. Unless the weather is severe, allow the chicks to run outdoors after the fourth day, even if there is snow or ice on the ground, but they must be taught to find their way back into the brooder house or brooder. Extra care should be used in this connection until the chicks learn to go to the heat when they need it. They will not remain out of doors to a harmful extent during bad weather—not after they have learned the way indoors. Driving them in half a dozen times, doing this before they have had a chance to get cold, will teach them the way. After starting the deep-litter method, or a modification of it, still continue to visit the young chicks two or three times daily to make sure they are getting along all right—that they have not developed the habit of huddling in cold corners and are not bothered by enemies, such as rats, cats, etc. Newly hatched chicks entrusted to double-apartment brooders should be taught to find their way from the exercising apartment to the warm brooding chamber, to keep them from huddling in cold places. They learn quickly. Herding them two or three times from the exercising apartment into the brooding chamber will serve the purpose in a properly constructed brooder.

The Seventh Day

Discontinue the milk, if you have been using it in place of water, and from this time on keep an ample supply of pure, fresh water before the chicks all the time. On the seventh day begin giving them beef scrap in small quantities, feeding it in a hopper to prevent waste, or on a board or in open dishes. At the start an ounce or so for thirty to forty chicks fed twice daily is about right for healthy, vigorous chicks. See that the smaller and weaker chicks get their share. Beginning with the second week —about the fourteenth day—keep beef scrap before the chicks in a self-feeding hopper all the time and let them eat what they want.

If chicks are hatched late in the season, after vegetation gets a good start, and are on range (with a mother hen, for example), where they can get a goodly supply each day of worms, bugs and insects they do not need other "animal" or meat food, but if chicks are raised in limited quarters, or early in the season, it is necessary to furnish this food in some form, and unquestionably a good grade of commercial beef scrap is the least expensive and most convenient way to meet this close-quarters or out-

of-season requirement of chick health and normal growth. It simply is a case of the owner or caretaker having to do for the chicks what Nature can not do at this time of year, or under conditions imposed by the poultryman. Another important point is this: Even when chicks and fowls have quite a large yard or space in which to range, they are very liable to exhaust, in a few days, the limited supply of worms, bugs, etc., in which case they soon show the need of meat food in some other form. The same is true of what might be called the natural supply of grit and shell-forming materials. To give a dozen or more brood hens the range of a farm is one thing; to raise the same number of chicks or several hundred chicks in restricted quarters, is a very different matter. When chicks are raised or fowls are kept in confinement, the successful poultryman finds it necessary to supply the green food, meat food, grit (chicken "teeth") and shell-forming materials that the birds require and can not obtain otherwise.

Sixth Week

Give the chicks nothing else up to the sixth week, except charcoal. Chicks a week old crave charcoal, and when it is first given to them will stand at the hopper and eat until white chicks look black. Charcoal aids digestion and prevents sour crop and bowel trouble. The safe plan is to keep chick-size grit and chick-size charcoal before them from the first, supplying both in a self-feeding wall hopper to prevent waste. Fed in this way, the little chicks can begin eating finely-granulated charcoal when they need it and will not take a wasteful amount.

Remember, that if best results are to be secured, young chicks must not be overheated or allowed to chill. Both cause diarrhoea and expose the chicks to head and lung colds. Fifty to seventy-five per cent of all bowel trouble in young chicks comes from chilling or overheating, and most of the other cases result from incorrect feeding. The day of the self-regulating brooder and brooding hover is here to stay. Newly hatched chicks cannot stand being exposed to changes in hover temperature, ranging from ten to forty degrees in as many hours, which often will be the case if the brooding hover is not self-regulated. Even when self-regulating brooders are used out-doors, they should be placed in the shade, otherwise the temperature on warm, sunshiny days will go beyond the danger point—well above one hundred degrees for example. Do not try to raise chicks in warm weather without shade. Cloth or burlap tacked on frames or nailed to stakes will answer early in the season. Later on, grow sunflowers in clumps or rows, or plant corn in hills and rows, thus allowing the air to circulate freely on hot, sultry days. Be sure that the ground of an out-door, small-space chick run does not become foul from too long use or from neglect. If yard space is limited, frequent spading and seeding will freshen the ground. If there is room to do so, use a hand or horse plow. Seed with oats or rye, oats preferred. Where yard space is available, out-door brooders should be moved to new ground at the end of each two or three weeks.

Deep-Litter Feeding of Chicks

Ideal deep-litter feeding of young chicks, as strongly recommended by us, consists in using eight inches of finely-cut litter in the coop, house or indoor runway occupied by the chicks, but the plan can be modified for use in any size or style of indoor or outdoor brooder by burying chick foods in two to four inches of litter on the floor of the brooding chamber or exercising apartment, and this modified form will give good results, though not as much food can be buried at one time in the shallow litter, and therefore, the saving in labor is not so great.

Ideal Form

If your chicks have an indoor runway or exercising pen, proceed as follows: Cover the entire floor of the pen with two inches of good litter, short-cut alfalfa or clover preferred, but hay-mow chaff, cut hay or straw will serve the purpose. Then scatter over this fifteen pounds of finely granulated chick food, next repeat with two inches more of litter, then fifteen pounds more of the food, until you have eight inches of litter and sixty pounds of food in a pen that is meant to accommodate fifty chicks. We do not advise more than fifty chicks in one flock, though seventy-five can be kept together in safety during the first few days. This supply of food will last fifty chicks about six weeks, on the average, together with the beef scrap and green food that is to be supplied. The litter need not be changed during the six weeks. The amount of litter here recommended will remain free from odor a much longer period. Five or six inches of litter for chicks up to fourteen weeks of age will give as good results as eight inches, except that you will have to feed oftener. The chicks should go to bed with full crops. If in doubt about the matter, feel of their crops at night and if they are not well filled, put some more food in the litter.

Modified Form

If your chicks are housed in a brooder used out of doors, so that it is better to feed them inside the brooder, especially while they are small, proceed as follows: Cover the floor of the brooder with an inch or two of finely-cut litter, then scatter over this three pounds of chick food; next add another inch or two of litter, then scatter three pounds more of the chick food and cover this with a liberal sprinkling of litter. A quart of chick food weighs 22 ounces, therefore, three quarts weigh about four pounds. The larger the brooder the more food you can bury in the litter at each feeding. The six pounds here mentioned will last fifty chicks three to five days, the time shortening as the chicks grow older and eat more. Changing the litter once a week is often enough if two inches of litter are used, and once in two weeks if four inches are used. If individual brooders—outdoor or indoor pattern— are used indoors, the chicks should be given a runway outside the brooder, in which case the feeding should be done in eight inches of litter placed in the runway, as directed in the foregoing paragraph. Early in the season outdoor brooders can be used indoors to advantage, especially in the case of newly-hatched chicks, but the chicks should be induced to exercise freely in dry, well-lighted, fresh-air quarters where they are protected from the drafts. Making them work for all the grain food they get to eat, is the only practical way to compel chicks to take this exercise while they are kept indoors. The same urgent need for life-giving, body-building exercise exists when chicks have only a limited outdoor runway. In all such cases we must provide enough exercise to take the place of the all-day-hunting on range for seeds, bugs, tender green shoots, etc., if we are to raise profitable numbers of healthy, vigorous, large-framed, well-feathered chicks—the kind that grow rapidly, and develop into prime specimens for any use to which we may decide to put them. To chicks that are being raised in outdoor brooders feed the beef scrap, grit and charcoal in hoppers or open dishes placed in exercising apartment. The use of hoppers will prevent a 25 per cent waste.

The difference between deep-litter fed and hand-fed chicks is very noticeable. The deep-litter "scratch-to-live" chicks have longer bodies, sturdier legs, are better feathered, are healthier and possess greater vitality. They are mostly frame and muscle, while the hand-fed chicks, to which is thrown several times daily all the food they will eat in a few minutes, are soft in flesh, feather out too fast for the growth of the body, are inclined to be inactive, seem droopy after meals, catch cold more easily and develop bowel trouble more often than is the case with deep-litter fed chicks.

For a period of six years we have tested the two methods side by side on Cyphers Company Poultry Farm, all other conditions being equal, and in every experiment the advantage has been clearly in favor of the deep-litter feeding, as judged by the greater number and better quality of chicks raised, without considering the highly important saving in labor and food. The labor item is reduced fully one-half and, surprising as it may seem, there is 20 to 30 per cent saving in feed.

Feeding by this work-or-go-hungry plan, we can take six, eight, ten, twelve, fourteen or twenty-weeks-old chicks and by special fattening—a simple process requiring fourteen to twenty-one days' time—can secure twenty to twenty-five per cent more weight in the form of squab broilers, broilers or roasters, than can be obtained by the use of hand-fed chicks of equal ages, while as for layers and breeders, in which size, vitality and perfect health are essential to best results, the hand-fed chicks are not in the same class with the big-frame, closely-feathered, vigorous specimens produced by the busy-chick, healthy-chick, deep-litter method. The principal gain, as regards heavier weights, comes from the larger frames that can take on and carry more meat, but additional to this are the better health and extra vigor of the deep-litter-fed chicks which enable them to digest and assimilate more food during the special fattening period.

Right Care and Correct Feeding to Get Largest Possible Egg Yield

Layers, as the word is used here, means pullet-hens that are selected, fed and handled with the sole object of getting the largest possible egg yield per layer between the date on which each pullet lays her first egg in mid-fall and the time when these "forced" egg producers start to molt as yearling hens the following summer.

In breeding and handling these heavy-laying pullet-hens it is not a question of fertile eggs, or of parent values to be transmitted to chicks, because the eggs laid by these birds are to be sold for table use and they will "keep" longer and give better satisfaction if they are sterile or "germless." To run male birds with layers of table eggs is a waste of food, room and labor—furthermore, the pullets and hens will lay more eggs in a given length of time, other conditions being the same, if there are no males with them. The period of greatest egg production in the life of a hen, if she is handled right with this object in view, is between the ages of five to six months, when she starts laying and the time, ten to twelve months later, when she enters her first molt. Successful egg-farmers aim to bring the pullets "into laying" in October and November, when the prices for new-laid eggs range highest on account of the natural scarcity, and they strive to keep them laying at the rate of forty to fifty eggs per day from each one hundred layers up to February 1st, and at the rate of sixty to seventy-five eggs per one hundred hens thereafter until molting time. First to last, they plan and feed with the object of forcing from these layers as many eggs as possible by the time they are sixteen, seventeen or eighteen months old, depending on the breed and early start at laying, at which age, when they are about to molt and stop laying, the owners sell them as market poultry, either live or dressed. In this case eggs are the one thing sought, everything else being sacrificed to that end, but generally the egg-farmer is able to sell the laid-out-hen for as much as it cost him to bring her to the laying period the summer and fall before.

To insure having these heavy layers at work during the time when their eggs will bring the highest prices, hatch the chicks, as a rule, during March, April or May. June hatched chicks (also late May chicks) can be brought to laying in November, before the severe cold weather arrives, but these late-hatched chicks usually will require special feeding in the form of wet-mash and an extra supply of green food.

Chicks from which the heavy layers are to be obtained should be kept on deep litter and made to work for all they get to eat in the form of cracked or whole grain. Here again we must have large frames, perfect health and great constitutional vigor, if our "egg machines" are to do the work expected of them. In heavy layers we require long, deep bodies, breed and size considered, so that there will be ample room for the vital organs and for record egg production. When fourteen weeks old the chicks are to be placed on range, or given as large an out-door runway as can be provided conveniently. It is time now to separate the sexes, as a general rule, unless you have done so at a younger age, as will be the case if you are handling Leghorns and have learned the advantages of disposing of the surplus cockerels as squab broilers, or as pound to pound and a half broilers. The young pullets will do much better if yarded by themselves in flocks of thirty to one hundred, depending on the size of the yard and of their roosting quarters.

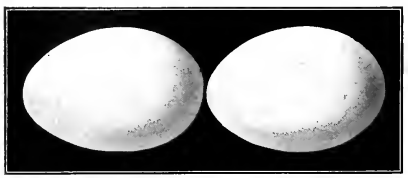
While on range, prior to about September 1st, feed the pullets all alike, but when they are eighteen to twenty weeks old, cull out of each flock any small, backward specimens, place these under-sized pullets by themselves and proceed to "force" them by feeding one or two meals each day of wet mash, made by mixing with the growing or fattening mashes as recommended for chicks on the first day with water, also feeding some form of green food that is rich in protein. For this purpose there is nothing else so good as short-cut alfalfa. One meal daily of the wet mash fed at the noon hour will answer the purpose as a rule, but if the pullets are extra backward give two meals in mash form each day. The object is to get these birds to eat more of the stronger food—a food that is fed in a ground or pulverized state, of which oats and meat meal form a prominent part; also a food that is eaten by the chicks in such shape that they get the full balanced ration, which is not the case when whole grain or cracked grain is fed and they can pick out what they like best and leave the rest in the litter or hopper.

Late-hatched chicks—June and late May chicks—will need to be "forced" in the same manner if they are to be brought to laying before the cold weather interferes. To these late hatched pullets feed one or two meals daily of the wet mash, as above directed, and be extra careful to see to it that they have an abundance of nourishing green food—all they will eat of it. Bear in mind that in mid-summer natural vegetation is well advanced, has passed the tender, appetizing stage—which is one of the main reasons why late-hatched chicks become stunted in growth and prove inferior to chicks that are hatched at a

time when natural vegetation is in the best form for their use. Lack of tender vegetation and summer heat form a combination that is too much for young chicks to combat successfully. If late-hatched they must have our help, both in the way of tender green food in ample amount and plenty of shade to protect them from the summer sun.

Feeding the Layers

Put the layer-pullets into winter quarters by October 1st to 15th. (we name this period as an average for the entire country), on six to eight inches of good scratching



STANDARD-SIZE EGGS

White Leghorn eggs that average to weigh 25 ounces to the dozen are graded as "select" in the New York City market, where smaller eggs are discounted in price. Pullet eggs range smaller naturally than those laid by mature hens of the same breed or variety, but individual pullets and hens of the same breed and flock also lay eggs that vary ten to twenty per cent in size and weight; therefore, in order to develop a strain that will produce large-sized eggs on the average, all persistent layers of small eggs among the breeders should be discarded. This should be the practice also in the case of pullets or hens that lay misshapen eggs of any description.

litter, and feed as follows: For the morning meal use coarsely-granulated scratching food, composed of the following grains:

25 lbs. Cracked Corn
40 lbs. Wheat
20 lbs. Kaffir Corn
10 lbs. Oats
5 lbs. Buckwheat
½ lb. Sunflower Seed

burying it deep in the loose litter. At noon feed a laying mash prepared as follows:

100 lbs. Wheat Bran
40 lbs. Corn Meal
40 lbs. Middlings
50 lbs. Beef Scrap
1-3 of Bulk of Alfalfa
3 lbs. Salt

mixed to a crumbly wet state with cold water. To this wet mash, before feeding, add about thirty per cent of short-cut alfalfa or clover, also five per cent of high protein beef scrap, a bit of salt and one per cent of fowl-size grit, mixing thoroughly. Percentages are by measure, not by weight. Alfalfa is a valuable egg food and gives the desirable rich color to the yolk. The alfalfa or clover should be steamed before using by having boiling water poured on it. Pour on as much water as the alfalfa or clover will take up readily, cover the vessel and allow the contents to steam until luke warm, then add to the mash. It is a good plan to let the alfalfa or clover steam over night. The greener-looking and more tender it is, the better the fowls will like it and they can not eat too much of this food. Alfalfa will soak up water to the extent of about one-half its own bulk. Once a week or oftener add one per cent of charcoal to the mash.

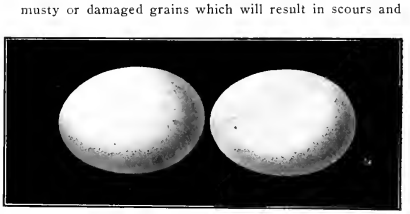
For the evening meal feed scratching food again in litter, feeding enough so that there will be some left for the fowls to begin on in the early morning when they come off the roosts. In winter time feed as early in the morning as convenient and supply the evening meal at least an hour before dark, giving the birds enough time to fill their crops. In spring and summer feed the scratching food about 7 A. M. and 5 P. M. Shake up the litter about three times a week with the foot or a fork so the grain will work well down into it and the fowls can move it to good advantage. Keep the litter dry. If it gets wet and is allowed to pack, the grain is liable to become musty. In scratching, the fowls work with their heads to the light and the litter will need to be loosened up and thrown or kicked back toward the windows.

Keep the laying mash before the heavy layers all the time in hoppers, also a constant supply of high protein beef scraps, fowl-size grit, charcoal, crushed oyster shells. Look closely after the supply of fresh, clean water and be vigilant against the presence of lice or mites.

Amount to Feed Layers

For each layer allow three ounces of the scratching food per day, or eighteen pounds per one hundred layers per day, feeding one and one-half ounces per hen at the morning meal and the same quantity for the evening meal. A quart of scratching food weighs 27 to 28 ounces.

Of the noon feed, consisting of the laying mash that is fed crumbly-wet, give the layers of any breed or variety all they will eat up clean in a period of fifteen to twenty minutes. Allow about a pint for each ten fowls at the first feeding and if they eat this, give them a further supply, about half as much more. Do not feed more than they will eat up clean. Wet mash that is left in the troughs or dishes over night is liable to sour and it is fatal to heavy egg production to allow the layers to eat sour food that will ferment in their crops, or to feed them musty or damaged grains which will result in scours and



BELOW STANDARD SIZE

White Leghorn eggs that average 19 ounces to the dozen would grade about 20 per cent lower in price in New York City and other central markets than the standard-size eggs shown above.

other bowel disorders. These record layers must be kept in prime condition if they are to yield the greatest profit. Keep the laying mash and beef scrap before them all the time (dry form) in waste-proof hoppers, so that any of the birds that do not get their fill each day of the wet mash (including birds on nests at noon hour) can go to the hoppers at will and help themselves to this special egg-forming ration.

Some kind of animal or meat food is absolutely neces-

sary to a heavy winter egg yield and a good quality of beef scrap is by far the most economical and convenient form in which to supply it. Other forms in common use are ground or cut green bone and chopped or ground fresh meat. Table scraps are excellent, but very limited in supply. Fowls will turn away from beef scrap and go fairly wild over cut green bone or chopped raw meat, but as a rule these articles are costly, when the labor of preparation is included. Tainted green bone or meat must not be fed to poultry on any excuse.

Often the addition of animal food, such as beef scrap, to the feeding ration of layers or should-be layers, will increase the egg yield 25 to 50 per cent within two weeks time. On the other hand, if the caretaker runs out of beef scrap, or other animal food, there is certain to be a decrease in the egg supply within a very few days. In case the layers have been without animal food several days, it is advisable to begin refeeding it gradually, otherwise they are sure to over-eat, causing bowel trouble. Make as few changes as possible in the feeding ration. Any sudden or marked change will at once cut down the egg yield. Feed as here directed, which insures variety, and you will obtain best results. All persons are invited to test this method most thoroughly, in competition with any other successful plan.

The thirty per cent of short-cut alfalfa that is added to the laying mash that is fed in crumbly-wet form will give the heavy layers all the winter green food they actually require, but still they will greatly relish other green food in the form of mangel wurzels, sugar beets, turnips, carrots, apples, etc. Cull apples are first class. Be sure to feed beets, turnips, etc., in a manner to induce exercise. The active hen is the happy hen—the kind that sings and lays the eggs. A good plan is to cut the beets, turnips, etc., in halves or quarters and hang up by use of a coarse string or wire, so that the fowls will have to reach for the food and follow it as it swings back and forth. Sprouted oats are unexcelled as a winter green food for chicks and adult fowls.

While the pullet-hen is about it she ought to produce a standard size egg—an egg that will run twenty-four to twenty-five ounces to the dozen in fall and winter, and 27 to 28 ounces to the dozen during the spring and early summer. In order to produce large-sized eggs, as well as lots of them, she must be big in frame for the breed, deep-bodied, in the best of health and possess the constitutional vigor to stand the strain of converting the daily supply of food into a pile of eggs which, if kept intact for the year of her greatest performance, would weigh six to eight times more than she does—a truly remarkable, but oft-repeated achievement of the Leghorn breed of Standard-bred domestic fowls.

Handling Breeding Stock

It is from the breeders that you want fertile eggs that will produce large, strong, vigorous chicks. To get chicks of this kind the parent stock must be large-framed, strong constitutionally and in excellent health. In order to secure parent stock of this quality we must give the birds time to develop normally without any "forcing," must house them in comfortable, sanitary quarters, must keep them busy to a healthful extent and must supply them with the food elements that are required to produce bone, sinew, flesh and feathers in the natural, health-protecting way.

When "on range" chicks and fowls, especially during the spring, summer and fall, can do a good deal to help themselves—to offset any neglect of the owner or caretaker in the way of supplying grit, green food, shell-forming material, etc. These free-range chicks and adult fowls also find for themselves a healthful variety of food elements in the form of waste grain, seeds, wind-fall fruit, etc., and they spend hours each day, hunting for animal food in the shape of worms, bugs and insects. But in all cases where chicks and fowls are confined indoors, or in limited quarters, it is necessary for the caretaker to supply the various food elements that the birds can not find for themselves, including shell-forming material and "chicken-teeth" in the shape of hard, sharp-edged grit.

In the first place, be sure that the breeders are housed in clean, dry, comfortable quarters, especially during the cold, stormy months of each year, also that they have a reasonable amount of outdoor freedom on pleasant days and during the open season—spring, summer and fall. Do not fail to have their house dry and the roosting space free from drafts in the late fall, winter and early spring.

Do your best to give the breeder liberal yard space with grass, rye, oats or at least soft, fresh, clean earth under-foot—also shade that they can go to when they need it. Poultry manure is strong; bare, hard ground soon contaminates; the hot sun over-heats the blood, and when we confine valuable breeders in small, bare yards we not only interfere with egg production, but seriously endanger the health, vigor and lives of the "foundation" of our entire poultry enterprise. The days of 2x4 poultry yards for valuable breeders are numbered, because the public is getting thoroughly tired of eggs sold for hatching that will not hatch, and of buying weakly chicks. For shade, plant corn in rows or sunflowers along the fences or in clumps. Better still, set out plum, peach, cherry or apple trees. Plum and peach trees will give you shade the third year, cherry trees the fourth or fifth year, and apple trees a year or two later, depending on soil, climate and variety.

Raising Big-Framed, Healthy, Vigorous Breeders

Chicks that are to be developed into breeders can not be handled and fed to better advantage than by the deep-litter, scratch-to-live method. Six weeks of age is too early, as a rule, to tell which of these chicks you wish to reserve as breeders, therefore at this age "wean" them to a good developing food, consisting of

30 lbs. Wheat
20 lbs. Cracked Corn
10 lbs. Kaffir Corn
10 lbs. Hulled Oats

until they are fourteen weeks old, then turn the prospective breeders out on range, placing them in colony houses or large-sized roosting coops, if convenient, and continue to give developing food, keeping the growing mash and high-protein beef scrap before them in hoppers all the time, also supplying green food, grit, charcoal and fresh, clean water. While these chicks are on deep litter, allow them to run outdoors on clean, healthy ground and be sure that they have plenty of shade.

Do not feed wet mash in any form to these prospective breeders during the growing season, unless some of them should be late-hatched or under-sized, and you desire to force their growth somewhat. As a rule, however, you are not in a hurry with their growth, nor to have them come into laying. We want big frames, according to the breed; we want bodies large enough to contain normal-sized, healthy, vigorous organs, but we have eight to nine months during which to build up these breeders—eight or nine months from May 1st of each year, for example, before we wish to have the well-matured pullets begin lay-

ing in the breeding pens the following January and February. Separate the sexes at fourteen weeks of age, if this has not been done previously in picking out surplus cockerels to be sold as squab broilers, broilers or friers; cull out all cockerels and pullets that you think of using or selling as table poultry or of reserving as forced layers, and aim to give the prospective breeders, males and females, the safest and otherwise best quarters that you have for the season's crop of young stock, because these birds are, or should be, your most valuable youngsters.

Put the breeder-pullets into winter quarters during October, on the average, or before winter weather arrives, but do not place the male brids with them until shortly before you want to begin using eggs for hatching purposes. These winter quarters should have outdoor runways for use on pleasant or quiet days. On stormy days, especially during severe cold weather, the best place for the breeders is indoors, provided the houses are dry and well ventilated.

From this time on, until you wish to start the heavy yield of eggs to be used for hatching purposes, feed as follows:

Give three meals daily of scratching food morning, noon and night, at the rate of one ounce per hen each meal, burying this dry-grain balanced ration food in eight to ten inches of loose litter. Keep before the fowls in hoppers all the time the growing mash, high-protein beef scrap, adult-size grit and charcoal, also a constant supply of fresh, clean water and once daily—morning, noon or mid-afternoon—give them all they will eat of a green food mash made up of nine parts steamed short-cut alfalfa and one to two parts of the growing mash, using enough of the latter to hold this crumbly-wet food together so the birds will pick at it. Sprouted oats are an excellent green food for these prospective breeders, but their use represents more labor and expense. Handle the breeding males in practically the same manner.

To stop or prevent early laying by the breeders, simply move them from one house or pen to another, repeating this if necessary.

Feeding for Fertile Eggs

Mate your breeding pens not less than two weeks before you wish to begin setting the eggs or selling them for hatching purposes. Three or four weeks is still better unless the eggs are extra valuable.

Now that the time has come when you want fertile eggs and lots of them, feed scratching food in deep litter twice a day, morning and evening, allowing an ounce and a half (weighs 27 to 28 ounces to the quart) of this grain food per hen at each meal and give the breeders a noon meal of crumbly-wet mash, consisting of

20 lbs. Red Dog Flour
20 lbs. Bran
30 lbs. Corn Meal
5 per cent Beef Scrap

to which is added thirty per cent of steamed short-cut alfalfa or clover, five per cent of high protein beef scrap and one per cent grit, this food to be mixed with water—tepid water in winter and cold water during warm weather. Each time add a bit of salt and two or three times each week add one per cent of charcoal to this crumbly-wet mixture. Percentages are by measure. Feed this mash in shallow troughs and give the breeders all they will eat up clean in a period of fifteen to twenty minutes at each meal. In feeding mashes of any kind, care should be exercised not to over feed.

Fertile Egg Mash

Additional to the foregoing, keep a fertile egg mash, consisting of

20 lbs. Red Dog Flour	20 lbs. Wheat Bran
30 lbs. Corn Meal	30 lbs. Ground Oats

in dry form before these fowls all the time in waste-proof hoppers, also beef scrap, grit, charcoal and crushed oyster shell. By this means hens that are on the nests at the time the noon meal is fed or that do not obtain their fill of crumbly-wet mash during the fifteen or twenty minutes it is before them, can go to the hoppers at any time and get what they want of the fertile egg mash, beef scrap, etc., and it is important that they should have this chance if all members of the flock are to lay large-sized eggs and plenty of them.

Be sure to supply green food daily in some palatable form. A green food mash composed of nine parts steamed short-cut alfalfa and one or two parts of egg mash, fed once daily, preferably at the noon hour, is urgently recommended. Sprouted oats are excellent; turnips, carrots, beets, etc., will answer the purpose.

Poultry keepers who wish to do so can omit the wet mash, simply feeding the scratching food in deep litter, egg mash (dry) and beef scrap in hoppers and using the green food mash (nine parts steamed short-cut alfalfa and one to two parts egg mash), or giving them green food in some other form and this plan will produce rich, strongly-fertile eggs, but not as many of them per layer during the important period from January or February to the end of the hatching season. To increase the egg yield, supply one meal daily of a crumbly-wet mash, composed of ten parts egg mash and three parts of steamed short-cut alfalfa, mixed thoroughly and left before the breeders fifteen to twenty minutes.

Another practically sure way to increase the egg yield where pullets or hens are a bit backward, is to "add variety" by giving them once each day a moderate amount of cut green bone or finely-chopped fresh meat. This will "rest them" from the beef scrap to which they have been accustomed from the early days of chickhood, and they will respond quickly. However, in case of large flocks this plan is not practical on account of the extra labor and expense.

Given strong, healthy parent stock, the chicks that are raised as advised in this article and that are fed and managed (in their capacity as breeders) as here directed, will produce large-sized eggs, rich in nourishment—eggs that if fertilized by a vigorous male will give you the kind of chicks that "have the kick in them," the kind that under proper care will grow steadily, in fact, rapidly from shell to market age or to maturity. You want large-sized eggs, rich in nourishment, because these factors are necessary to large-sized, healthy chicks. Nature is compelled to build the chick with the materials you supply. A small egg means a small-sized chick and a "lean" egg—an egg deficient in nourishment—means a weakened chick or one more that will die in the shell. We wish that every reader of these lines could fully realize that it is of the utmost importance that the breeders shall be right and that the hatching eggs shall be right, provided success is to be achieved and profits are to be made in any branch of the poultry business as a stock-growing industry. Without such breeders, and such eggs, the hope of permanent success and of satisfactory profits will prove to be a will-o'-the-wisp, first to last.

Healthy, vigorous breeding stock that is properly handled means "hatchable" eggs, and it is a true saying that "chicks well hatched are half raised."